



TENDER DOCUMENTS

FOR

CONSTRUCTION OF 4 (FOUR) LANE ELEVATED CORRIDOR FROM E.M. BYPASS NEAR METROPOLITAN HOUSING ESTATE TO MAHISBATHAN (NEAR NEW TOWN) WITH CONNECTIVITY TO SALT LAKE SECTOR-V" THROUGH ENGINEERING, PROCUREMENT AND CONSTRUCTION (EPC) MODE TURNKEY CONTRACT BASIS.



SUPERINTENDING ENGINEER

CIRCLE-I, ROADS AND BRIDGES SECTOR

KMDA

**KOLKATA METROPOLITAN DEVELOPMENT AUTHORITY
OFFICE OF THE SUPERINTENDING ENGINEER
CIRCLE NO. 1, R & B SECTOR, K.M.D.A.
UNNAYAN BHAVAN, MAIN BLOCK, (5th FLOOR)
SALT LAKE, KOLKATA – 700 091**

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PROFORMA OF ABRIDGED TENDER DOCUMENTS

e-NIT No-	07/SE/C-I/R&B/KMDA of 2024-25; Dt.- 23/07/2024
Chief/Superintending/ Executive Engineer	Superintending Engineer, Circle-I, R&B Sector, KMDA
Sector/Circle/Division and office address	Circle-I, R&B Sector, KMDA Address- Office of the Superintending Engineer, Circle-I, R&B Sector, KMDA, Unnayan Bhavan, 5 th floor, Main Block, Salt Lake City, Kolkata -700 091. e-mail id: kmdarbc1@gmail.com
Cost of Tender Document	NIL
Last date & time of Submission of Tender	Date: 02.09.2024 Time: 14.00 P.M.

Sl. NO.	Name of the Road	Earnest Money (Rs.)	Time of Completion
1	Construction of 4 lane Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (Near New Town) with Connectivity to Salt Lake Sector - V” through Engineering, procurement and construction (EPC) Mode Turnkey contract Basis.	Rs. 13.59 Cr	18 (Eighteen) Months

For detail information please visit <https://wbtenders.gov.in> & <https://kmda.wb.gov.in>

**Superintending Engineer,
Circle-I, R&B Sector, KMDA**

No: 35/1(16)/SE/C-I/R&B/KMDA/W03 (PART-I)

Date: 23/07/2024

Copy forwarded information and necessary action to:

1. CEO, KMDA
2. Secretary, KMDA
3. The Chief Engineer, R&B Sector, KMDA
4. The Director of Finance, KMDA
5. Senior Law Officer, KMDA
6. The Chief Engineer in charge, E&M Sector, KMDA
- 7.-11. The Superintending Engineer Circle-II / III/IV/V, Programme, R&B, KMDA
- 12-13. The Executive Engineer /North Division/SCD-III/ R&B Sector, KMDA
14. A.C.F.A., R&B Sector, KMDA.
15. The Estimator, Circle-1/ R&B Sector / KMDA
16. Notice Board, R&B Sector/ KMDA.

**Superintending Engineer,
Circle-I, R&B Sector, KMDA**

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NOTICE INVITING TENDER (NIT)

Name of the work:- Construction of 4 Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (Near New Town) with Connectivity to Salt Lake Sector-V” through Engineering, procurement and construction (EPC) Mode Trunkey contract Basis.

“e” Tender NIT. No 07/SE/C-I/R&B/KMDA/W-03(Part-I) of 2024-25; Dt.- 23.07.2024

Tender Ref No. CIVIL/KMDA/07/SE/C-I/R&B/KMDA of 2024-2025

NIT No	Name of Work	Earnest Money	Completion Period
00/SE/C-I/R&B/ KMDA of 2024- 2025	“Construction of 4 (four) lane Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (Near New Town) with Connectivity to Salt Lake Sector-V” through Engineering, procurement and construction (EPC) Mode Trunkey contract Basis”.	Rs. 13.59 Cr	18(Eighteen) Months

Superintending Engineer, Circle-I, R&B Sector, KMDA, on behalf of the Government of West Bengal (hereinafter referred to as KMDA/Authority/Employer) has adopted a single stage –Two Packet Bid System (collectively referred to as the "Bidding Process") for selection of the Bidder (the “Selected Bidder”) for Award of the Project. The reputed bidders who find they complying with the Qualification Criteria of Request for Proposal (RFP)/ Bidding Document are requested to submit their Bids for the subject Works with following details:-

Superintending Engineer, Circle-I, R&B Sector, KMDA, Unnayan Bhavan, Main Block, 5th floor Salt lake, Kolkata-700 091 invites online bids of the said NIT from bonafide, reliable, experienced & resourceful firms / individuals contractors, joint ventures / consortium who have successfully completed works in Government / Govt. Undertaking / Autonomous Bodies / Semi-Govt. / Statutory Bodies/ Local Bodies having following scope of work, Eligibility and Qualification criteria:-

1. Scope of work:-

Kolkata Metropolitan Development Authority (KMDA) [herein referred to as the “Authority”/ “Employer”] invites application for Award of the Project for “Construction of 4 lane Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (Near New Town) with Connectivity to Salt Lake Sector-V” through Engineering, procurement and construction (EPC) Mode Trunkey contract Basis. (Herein after referred to as the “**project**”). [Civil, Electrical and Instrumentation works] [Design, construction and operation & maintenances for 5(five) years]. The reputed bidders who find themselves complying with the Qualification Criteria of Request for Proposal (RFP) /Bidding Document are requested to submit their Bids.

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For avoidance of doubt it is here by clarified that the expression “Construction Works” unless the content otherwise requires, shall refer to the Design Construction of 4 lane Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahishbathan (Near New Town) with Connectivity to Salt Lake Sector-V” within a period of 18(Eighteen) months.

The project shall constitute the following components:-

- A.** 4 (four) lane Elevated corridor of width: 16.5 m from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (Near New Town) with Connectivity to Salt Lake Sector-V” Length 5990 m (more or less)
- B.** Ramp-1 (UP Ramp form Sector -V beside Nalban) Width: 8.5m, length:- 411.16 m (more or less)
- C.** Ramp-2 (Down Ramp towards College more).width: 6.5m, Length : 370.76 m (more or less)
- D.** Ramp-3 (Up Ramp from Salt Lake to Bypass near Ring Road) width: 8.5m, Length: 312.89 m (more or less)

Cumulative Ramp Length: 1094.81 m (more or less)

Total length of the Proposed Bridge = 7.10 K.M. (more or less) including Ramp length.

The scope of work will broadly include construction of new Flyover of above components with rehabilitation of existing pavement, construction and/or, culverts, road intersections, interchanges, drains, etc. and maintenance of the Project during the Maintenance for be 5 (five) years and Defect Liability Period, which shall be 5 (five) years.

2. Eligibility and Qualification Criteria:-

For determining the eligibility of Bidder the following shall apply:

The qualified of a bidder will be ascertained on the basis of the digitally signed documents in support of the minimum criteria as mentioned herein below. If any document submitted by a bidder is either manufactured or false/fabricated, in such cases the qualification of the bidder will be rejected outright at any stage without any prejudice to the rights of KMDA.

- a) The intending bidder must have successfully completed similar type of work in respect of construction of Elevated corridor/Bridge/Flyover/ROB / Railway project of corridor of Government / Govt. Undertaking / Autonomous Bodies / Semi-Govt. / Statutory Bodies/ Local Bodies etc. for a minimum amount of Rs.271.64 crores (Two Hundred Seventy-One Point Sixty-Four) within last 7(seven) years.
- b) Shall produce credentials of one single running work of similar nature of Project which has been completed to the extent of 80% or more and value of executed

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part of which is not less than the desired value. (In case of running works, only those bidders who will submit the current certificate of satisfactory running work from the concerned Executive Engineer, or equivalent competent authority will be considered eligible for the present tender. In the required certificate it should be clearly stated that the work is in progress satisfactorily and also that no penal action has been initiated against the executing agency, i.e. the tenderer/bidder.)

C) Particulars regarding Joint Venture/Consortium:-

- i) One of the Partners of any Joint Ventures/Consortium has to be designated as Lead Partner and the same will be mentioned in MoA/MoU.
- ii) Bid from Joint Ventures / Consortium shall be accompanied by a copy of MOA/MOU on a stamp paper of Rs.100.00 outlining the joint interest to work on the project and specifying the other terms of agreement.
- iii) The lead partner must hold 51% equity capital of the Company to be formed between them during the Tenure of contract implementation.
- iv) The successful joint ventures/consortium will have to form a special purpose vehicle (S.P.V) register the same under Indian Company's Act.
- v) The lead partner must have credential and satisfactory completion of same nature of works / civil work of completion cost not less than 50% value of qualifying amount i.e. 50% of the value of work under present tender in a single contract under any Govt./Semi-Govt. organization/Autonomous body as principal employer within last 7(Seven) Years.
- vi) Each of the other partners shall meet individually not less than 25% of the qualifying criteria mentioned above under any Govt./semi-Govt. organization /Autonomous body as principal employer within last 7 (seven) years. However the lead partner along with other partner/partners should jointly meet at least 100% of the general qualifying criteria (Clause No.2 (a), (b) above). But as mandatory minimum experience as per clause no. 2(f) must be demonstrated by all the JV members.
- vii) The lead partner shall have to apply for tender on behalf of joint ventures/consortium along with MOA/MOU.
- viii) In case of any litigation (Between KMDA and lead member or partners of any joint venture or member of Consortium) or in the event of any default arises during the execution/contract period of the agreement, the lead partner will remain fully responsible.
- ix) The successful joint ventures/consortium will have to submit GST Registration/PAN CARD /TRADE LICENSE immediately after issuance of L.O.I.
- x) In case of Joint venture, the lead partner or any other member cannot apply as a single bidder. If during the course of evaluation of the bid, it is found that any member of the JV has applied separately as single bidder also, in that case both/all the bids as single bidder as well as JV shall be treated as cancelled.

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d) The bidder (in case of a consortium, all the members taken together) shall have the requisite engineering and management personnel and other personnel as is required for undertaking the Services and construction equipment of its own, either purchased or taken on hire.

e) The completed Project shall comprise of preparation of General arrangement drawing, structural design and drawing and related inter-disciplinary services at any place(s) in India during the last 7(Seven) financial years from the date of publication of the tender. If such Project has been executed by the bidder as a member of a Joint Venture, in such a case, the bidder's credentials will be considered in proportion to their shareholding in the Joint Venture in terms of the Joint Venture Agreement.

- All the joint venture partners have to be registered in India.

f) **As mandatory minimum experience.**

a) Technical:

The sole Bidder individually (Not with JV) shall demonstrate following experiences in successfully Completed EPC projects supported on single pier within last 7(seven) years from the bid due date.

1. 4 Lane Road Flyover/ROB/Elevated corridor of single structure of length at least 5 KM having predominant span at least 35m with PSC girder/Segment in super structure constructed with launching activity of pre-stressed concrete super-structure/steel super-structure of length minimum 4 km in a single year with heavy duty crane and or launching girder, the structure should also have at least one obligatory span of at least 90m (width not less than 12.5m) with steel super structure at a height 2nd tier or above over road intersection. The entire structure should be constructed over large diameter (not less than 1.2m) pile foundation.

2. 4 Lane Road Flyover/ROB/Elevated corridor structure constructed at the height of 15m or above of at least 200m length in any Urban place*.

3. 1.5 or 2 Lane Viaduct-Ramp structure constructed in a Road Flyover/ROB/Elevated corridor structure having Radius 50m or less in any urban place*.

* "in any Urban Place" means the constructed structures must belong to the metro cities or may include any area under any Development authority under the Town and Country Planning act of any other state or specified in the completion certificate as Urban Project.

b) Financial

i) The Bidder should not have booked loss in more than two financial years out of last seven consecutive Financial years from the bid due date.

All details available in RFP.

3. Details of this e-NIT are available from the website <https://wbtenders.gov.in/> or Departmental website <https://www.kmda.wb.gov.in>

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4. Bid documents (Online) may be downloaded from the website <https://wbtenders.gov.in> directly by the help of Digital Signature Certificate.
5. The Intending Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the site of works and its surroundings and required to see the site of work and get themselves thoroughly acquainted with local conditions and all factors which may affect their rates, specifically regarding the accessibility to site for transport of construction materials or for removal of surplus spoils etc. which necessitate the carriage by head load or by other means or for dewatering of any quantity of water accumulated at site before starting the execution that maybe necessary for preparing the Bid and entering into a contract for construction of the works. It shall be clearly understood that no claims for extra payments on this account shall be entertained at any stage. Each tenderer shall have to furnish a certificate as a token of compliance with the above in the prescribed form of Declaration attached here in after. The costs of visiting the site shall be at the Bidder's own expense.
6. **Earnest Money deposit (EMD)** is to be remitted by the Tenderer in favour of **KMDA**. Payable at **KOLKATA**, as mentioned in the **column 3** above through Net-Banking/ RTGS/NEFT in respect of the Tender ID as per requirement of e-Procurement System of Government of West Bengal (<https://wbtenders.gov.in/>).

In addition instruction by the Finance Department **MEMORANDUM**, vide no. - **3975-F(Y); Dated, 28th July, 2016** to be followed for ready reference and guidance.

Or

Earnest Money to be submitted in the form of Bank Guarantee from a Nationalized Bank, acceptable to the authority as per format provided by KMDA and in such event the validity period of the bank guarantee shall not be less than 180 (One hundred and eighty) days from the bid due date inclusive of a claim period of 60 days and may be extended as may be mutually agreed between the authority and the bidder from time to time

7. Bidders should quote the rate including all Govt. statutory Tax's and GST as applicable time to time. The Tax invoice(s) need to be issued by the supplier for raising claim under the contract showing separately, the tax charged in accordance with the provisions of GST Act, 2017.
8. **Submission of Tender:** - a) Pre-qualification/Technical Bid and Financial Bid both will have to be submitted online concurrently duly digitally signed in the website <https://wbtenders.gov.in> as per time schedule stated herein under. Time will be reckoned as per Server Clock. b) The Financial Bid of the prospective tenderers will be opened only if the tenderer qualifies in the Technical Bid. The decision of the Tender Inviting Authority will be final and binding to all concerned and no challenge against such decision will be entertained.
9. The intending Bidders shall clearly understand that whatever may be the outcome of the present invitation of Bids, no cost of Bidding shall be reimbursable by the Department. The Tender accepting authority of **Roads & Bridge Sector, KMDA** reserves the right to accept or reject any offer without assigning any reason whatsoever and is not liable for any cost that might have been incurred by any Tenderer at the stage of Bidding.

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11. Conditional / Incomplete Tender will not be accepted under any circumstances.

12. During scrutiny, if it comes to the notice of the Tender inviting authority that the credential or any other paper found incorrect / manufactured / fabricated, that bidder would not be allowed to participate in the Tender and that application will be rejected without any prejudice.

13. Before issuance of the LOI/WORK ORDER, the Tender inviting authority may verify the hard copy of credential and other documents of the lowest tenderer if found necessary. After verification if it is found that the documents submitted by the lowest Tenderer is either manufactured or false in that case, work order will not be issued in favour of the said Tenderer under any circumstance. The said tender shall stand cancel. The Authority will go for fresh tender in its own decision. The Earnest Money deposit of such defaulter bidder shall be forfeited and that bidder shall be debarred from participating in any tender in KMDA for 2(two) years.

14. Refund/Settlement Process:

After opening of the bids and technical evaluation of the same by the tender inviting authority through electronic processing in the e-Procurement portal of the State Government, the tender inviting authority will declare the status of the bids as successful or unsuccessful which will be made available, along with the details of the unsuccessful bidders, to the intending bidder and the EMD will be returned to the unsuccessful bidders after issuance of the LoA to the successful bidder.

15. The three State Government Enterprises, viz. Mackintosh Burn Ltd., Westinghouse Saxby Farmer Ltd. and Britannia Engineering Ltd. may be dealt separately as per Govt. Notification for exemption from depositing of Earnest Money/Bid Security for participating in the instant Bid subject to the condition that they will furnish security deposit(s) as applicable if selected as a successful bidder in the bid.

Sl No	EVENT DESCRIPTION	DATES
1	<i>Date of uploading of N.I.T. & other Documents (online) (Publishing Date)</i>	Date: 24.07.2024 Time: 16.00 hrs
2	<i>Documents download start date (Online)</i>	Date: 24.07.2024 Time: 16.00 hrs
3	<i>Documents download end date (Online)</i>	Date: 02.09.2024 Time: 14.00 hrs
4	<i>Pre-bid Meeting Date & Time</i>	Date: 01.08.2024 Time: 14.00 hrs
5	<i>Seek Clarification Start Date & Time</i>	Date: 02.08.2024 Time: 16.00 hrs
6	<i>Seek Clarification End Date & Time</i>	Date: 05.08.2024 Time: 16.00 hrs
7	<i>Issue of Response (As per written queries submitted by the bidders within scheduled period)</i>	Date: 09.08.2024
8	<i>Online Bid Submission Start Date & Time</i>	Date: 10.08.2024 Time: 11.00 hrs

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9	<i>Online Bid Submission Last Date & Time</i>	Date: 02.09.2024 Time: 14.00 hrs
10	<i>Time and Date of Opening of Technical Bid (Bid will be opened by the Authorized Officer)</i>	Date: 04.09.2024 Time: 14.00 hrs
11	<i>Date for opening of Financial Proposal (Online)</i>	To be notified later

16. The intending Bidder(s) are required to quote their respective **Techno-commercial offer under EPC mode turnkey basis Contract online.**

17. Name and address of the division concerned:-

a) The Executive Engineer, Special Construction Division-III, R&B Sector, KMDA. 7th floor, Unnayan Bhavan, Bidhannagar, Kolkata-700091. **e-mail id: scd3.rd.kmda@gmail.com**

b) The Executive Engineer, North Division, R&B Sector, KMDA. 1st floor, Unnayan Bhavan, Bidhannagar, Kolkata-700091. **e-mail id: northdivision.rd.kmda@gmail.com**

18. Name and address of the Bid inviting authority:- The Superintending Engineer, Circle-I, R&B Sector, KMDA. 5th floor, Unnayan Bhavan, Bidhannagar, Kolkata-700091. **e-mail id: kmdarbc1@gmail.com.**

19. Name and address of the authority accepting the bids:- The Superintending Engineer, Circle-I, R&B Sector, KMDA. 5th floor, Unnayan Bhavan, Bidhannagar, Kolkata-700091. **e-mail id: kmdarbc1@gmail.com.**

20. Scanned copy of PAN card, Valid Trade License, P. Tax Enrolment Certificate, P. Tax current year challan, P.T.P.C., G.S.T. Certificate, Valid Income Tax (For last 3 years), Last 3 years Profit & Loss and Balance sheet, Credential, Work order, Payment Certificate, Bank Solvency with qualification certificate and other supporting documents, Registration Certificate and/or trade license of the company must be submitted duly digitally signed at desired location in the website <https://wbtdenders.gov.in>. **Bidders should be submitted EPF registration and ESI Registration certificate.**

21. Scanned Copy of one original affidavit before Notary will have to be submitted mentioning the correctness of the documents and a declaration of penalty debarment etc. faced by him under any Govt./Semi-Govt./Autonomous body/Institution through on line at desired location,

22. Bidders have to qualify the eligibility criteria of **Bid Capacity as per Annexure-IV. (Details in RFP)**

23. **Bids shall remain valid for a period of 180 (One eighty) days from the last date of submission** of Financial Bid / Sealed Bid. If the L1 bidder withdraws the bid during the period of bid validity the earnest money as deposited will be forfeited forthwith without assigning any reason thereof. No escalation shall be granted in the bid validity period under any circumstances.

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24. Construction of elevated corridor over Kolkata Wetland side please follows the submitted EIA report to the National Wetland Committee.
25. In non-wet land region in order to cater huge surface run off from deck slab in definite direction provision of rider drain is essential.
26. In case of construction of temporary passage/access road to pass machineries equipment's at the construction point in the wet land area of about 1.5 KM stretch of length, the guidelines issued by the national wetland committee or any other authority is to be strictly complied.
27. Drainage network of special kind is also required for discharge of storm water in the Ramsar stretch (wet land area) of length about 1.5 km. Surface storm water mixed with hydrocarbons cannot be discharged within the wetland area in any case.
28. The contract documents are to be taken as a whole. The several documents for kind of contract are to be taken as mutually explanatory of one another. If, however, the stipulation of the different documents be at variance in any respect, one will override the others (only in so far as these are at variance) in order of precedence as given below:
 - (a) Letter of Intent (L.O.I) or Letter of Acceptance (LOA)
 - (b) Notice Inviting Tender (NIT) including Addendums/Corrigendum if any.
 - (c) Request for proposal. (RFP)
 - (d) Addendum/ Corrigendum to the Bid.
 - (e) Minutes of the Pre-bid conference and addendum issued subsequently Special terms and condition.
 - (f) General terms of Contract (The printed Tender from)(KMDA from No. I).
 - (g) Special Condition of contract(SCC)
 - (h) Special terms and condition
 - (i) Technical specification.

29. EXECUTION AND PAYMENT OF CIVIL, ELECTRICAL/MECHANICAL WORKS.

The tender accepting authority is the Superintending Engineer, Circle-I, R&B Sector, KMDA.

All Civil works will be executed under the supervision of Executive Engineer, Special Construction Division-III and North Division, R&B Sector, KMDA. Executive Engineer, Special Construction Division -III will act as nodal Engineer and also Engineer-In-Charge (EIC). All works will be executed under supervision of the concerned Executive Engineers and measurements / certification of the respective zone of works regarding "Construction of 4 Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (Near New Town) with Connectivity to Salt Lake Sector-V" through Engineering, procurement and construction (EPC) Mode Trunkey contract Basis" will be recorded and governed by the concerned division office of the R&B sector, KMDA. In addition to the above, as the Executive Engineer, Special Construction Division-III, R&B sector, KMDA will act as nodal officer for the above cited work, he will deal with the matter concerning the upkeep of the abstract measurements of the work for all R/A bills as well as final bills, extension of time (if necessary) for all the works

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including overseeing the process of payment of the bills etc. as per rules in force from time to time.

All Electrical / Mechanical works will be executed under the supervision of Executive Engineer, Electrical Division-II, E& M Sector, KMDA.

All Design & drawings related to civil works will have to be approved by the Superintending Engineer, Circle-I, R&B Sector, KMDA. The measurement of civil works will be recorded by concerned division offices of R&B Sector, KMDA.

All correspondences, design & drawing related to Electro-Mechanical works including factory visit of Generator, pump & motors will be approved by the concerned Superintending Engineer, Electrical circle-I, E&M Sector, KMDA and Executive Engineer, Electrical Division-II, E & M Sector, KMDA. The measurement of Electro-Mechanical works will be recorded by concerned division office of E&M Sector, KMDA.

All Design & drawings related to Electrical works will have to be approved by the Superintending Engineer, Electrical circle-I, E&M Sector, KMDA.

However, the financial abstract of all R/A bills as well as final bill will be prepared and submitted by the R&B Sector, KMDA.

30 A) List of common documents shall have to be uploaded by each tenderer at the time of submission of Tender through online:-

- i. Income Tax Return (For last 3yrs)
- ii. Pan Card.
- iii. Professional Tax clearance certificate.
- iv. GST registration.
- v. Trade License.
- vi. Technical Credential.
- vii. Work Order for the work in technical credential.
- viii. Payment certificate of the said work.

- ix. The bidder (in case of a consortium, all the members taken together) shall have an average annual turnover of Rs.1700 Crores for the last 5 financial years. A positive net worth as on the day of submission of bid, as certified by its Statutory Auditor. In case the bidder is a consortium, the lead member shall have an average annual turnover of Rs. 850 Crores and the non-lead members shall have a average annual turnover of Rs. 425 Crores for the last 5 financial years and all such members shall have a positive net worth as on the day of submission of bid, as certified by their respective Statutory Auditor(s) or Chartered Accountant(s). In addition, the Statutory Auditor/Chartered Accountant has to also certify that the bidder has not applied for Corporate Debt Restructuring (CDR)/ Strategic Debt Restructuring (SDR), as on the date of submission of bid.

- x. The bidder (in case of a consortium, the lead member) shall submit Bank Solvency Certificates from scheduled banks showing that the bidder is entitled to a cash credit facility of not less than Rs. 271.64

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Crores and date of which shall not more than 6(six) month before the publication date of the e-NIT.

- xi. Engineer's qualification Certificate.
- xii. B.O.Q of the similar nature of work.
- Xiii. Registration certificates and relevant papers of Employees Provident Fund & ESI.

B) List of documents shall have to upload by a Partnership Firm in addition to Sl. No. 26.A)

- i) The power of Attorney for the firm for signing the tender by a partner.
- ii) Partnership Deed.

C) List of documents shall have to upload by a Partnership Firm in addition to Sl. No. 30. (A).

- i) Valid N.O.C. from concern ARCS.

D) List of documents shall have to upload by a Joint Venture/Consortium in addition to Sl. No. 2 (C).

- i) copy of MoA/MoU on a stamp paper of Rs.100.00 outlining the joint interest to work on the project and specifying the other terms of agreement.

31. **Language of Tender:** - The tender shall be submitted in the prescribed form in English. All literatures and correspondence in connection with the tenders shall be in English.

32. **Others:** - The Tender Notice along with other documents like Tender Form No. -1 KMDA, Technical Specification, Special Terms and Conditions, BOQ, Addendum and corrigendum etc. whatever documents uploaded by the department concerned there to shall be part and parcel of the Tender.

33. **Declaration:** - Tenderer must upload and submit duly digitally signed a declaration as per prescribed format for confirmation of his awareness of the contract.

34. **Required Manpower :** -

The prospective bidders shall have in their full-time engagement experienced technical personnel.

35. **Security Deposit and Defect Liability Period:-**

The Defect Liability Period for the work is 5 (Five) year from the actual date of completion of the work.

- a) No security deposit shall be refunded to the contractor for first 3 (three) year from the actual date of completion of the work.
- b) 30% of the security deposit shall be refunded to the contractor on expiry of 4 (Four) years from the actual date of completion of the work.
- c) The balance 70% of the security deposit shall be refunded to the contractor on expiry of 5 (five) years from the actual date of completion of the work.

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36. The tender inviting authority reserves the right to accept or reject any or all the tenders without assigning any reason what so ever.

- a. KMDA reserves the right to,
 1. accept any Bid;
 2. reject any Bid;
 3. annul the bidding process and reject all Bids;
 4. annul the bidding process and commence a new process; and
- b. Nothing in ITB or RFP is intended to permit KMDA to refuse to provide reasons for rejection to an unsuccessful Bidder.
- c. KMDA shall not be liable to inform every unsuccessful bidder individually about the fate of their tender.

For detail information please visit <https://wbtenders.gov.in> & <https://www.kmda.wb.gov.in>.

No: 35/SE/C-I/R&B/KMDA/W-03 (PART-I)

Date: 23.07.2024

Copy forwarded to the Deputy Director, P.R. Department, KMDA- enclosed please 5(Five) copies of this NIT He is requested to kindly circulate the NIT as per prevailing norms of KMDA.

Superintending Engineer,
Circle-I, R&B Sector, KMDA

No: 35/1(15)/SE/C-V/R&B/KMDA/ W-03 (PART-I)

Date: 23.07.2024

Copy forwarded with the request to kindly display the NIT in the Notice Board for wide circulation to:

Copy forwarded information and necessary action to:

1. CEO, KMDA
2. Secretary, KMDA
3. The Chief Engineer, R&B Sector, KMDA
4. The Director of Finance, KMDA
5. Senior Law Officer, KMDA
6. The Chief Engineer in charge, E&M Sector, KMDA
- 7.-11. The Superintending Engineer Circle-II / III/IV/V, Programme, R&B, KMDA
- 12-13. The Executive Engineer /North Division/SCD-III/ R&B Sector, KMDA
14. A.C.F.A., R&B Sector, KMDA.
15. The Estimator, Circle-1/ R&B Sector / KMDA
16. Notice Board, R&B Sector/ KMDA.

Superintending Engineer,
Circle-I, R&B Sector, KMDA

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INSTRUCTION TO BIDDERS(ITB)

Instruction / Guidelines for tenders for electronic submission of tenders online have been annexed for assisting the contractors to participate in e- tendering.

- 1. Registration of Contractor:** - Any contractor willing to take part in the process of e – Tendering will have to be enrolled & registered with the Government e – Procurement system through logging on to <https://wbtenders.gov.in>. The contractor is to click on the link for e – Tendering site as given on the web portal.

- 2. Digital Signature Certificate (DSC):-** Each contractor is required to obtain Digital Signature Certificate (DSC) for submission of tender, from the approved service provider of the Controller of Certifying Authority, Govt. of India (<http://cca.gov.in>) on payment of requisite amount. The Contractor can search the tender and download NIT and other tender documents electronically from computer once he/she logs onto the website <https://wbtenders.gov.in>. This is the only mode of collection of the tender documents. A prospective Bidder shall be allowed to participate in the job either in the capacity of the individual or as a partner of a firm. If found to have applied several in single job all his applications will be rejected for that job.

The Contractor can search & download NIT & Tender documents electronically from computer once he /she logs to the website mentioned Clause 1 using the Digital Signature Certificate. This is the only mode of collection of the Tender Documents.

- 3. Collection of Tender documents:-** The contractor can search & download NIT & Tender documents electronically from computer once he logs on to the website mentioned Clause 1 using the Digital Signature Certificate. This is the only mode of collection of Tender documents.

4. Submission of Tenders :-

- a) **General process of submission:-** Tenders are to be submitted through online to the website stated in Cl.1 in two folders at a time for each work, one is Technical bid and other is Financial Bid before the prescribed date and time using the Digital Signature Certificates.
- b) **Technical Bid:-** Technical Bid contain scanned copies of the followings further in two cover (folder).

A-1. Statutory Cover Containing.

- i) Earnest money (EMD) as prescribed in the NIT.
- ii) NIT (downloads & uploads the same digitally signed).
- iii) Declaration as per prescribed format.

N.B: Bidder must download KMDA Tender Form No-1 (General Terms and Condition), Special condition of contract, RFP, Special Terms & Conditions, Technical Specifications, all other addendum, Corrigendum etc. whatever

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documents uploaded by the department in the web under the NIT and must go through carefully before quoting his rate. These documents are necessarily be uploaded by the bidder.

A-2. Non Statutory/Technical documents Cover containing.

- i. Income Tax Return (For last 3yrs)
- ii. Audited Balance Sheet (For last 3yrs) average annual turnover for last three years.
- iii. Pan Card.
- iv. Professional Tax clearance certificate.
- v. Vat clearance certificate
- vi. GST registration.
- vii. Trade License.
- viii. Technical Credential.
- ix. Work Order for the work in technical credential.
- x. Payment certificate of the said work.
- xi. The bidder (in case of a consortium, the lead member) shall submit Bank Solvency Certificates from scheduled banks showing that the bidder is entitled to a cash credit facility of not less than Rs. 271.64 Crores and date of which shall not be more than 6(six) month before the publication date of the e-NIT.
- xii. Bank Solvency Certificate as mentioned above.
- xiii. Engineer's qualification Certificate.
- xiv. B.O.Q/ percentage breakup of the similar nature of work.
- xv. Registration certificates and relevant papers of Employees Provident Fund & ESI.

Note: Failure of submission of any of the above mentioned documents (as stated in A-1 & A-2) will render the tender liable to summarily rejected for both statutory & non statutory cover.

5. THE ABOVE STATED NON STATUTORY / TECHNICAL DOCUMENTS SHOULD BE ARRANGED IN THE FOLLOWING MANNER.

Click the check boxes beside the necessary documents in the My Document list and then click the tab "Submit Non Statutory Documents" to send the selected documents to Non Statutory folder. Next Click the tab "Click to Encrypt and upload" and then click the "Technical" Folder to upload the Technical Documents.

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Sl. No	Category Name	Sub-Category Description	Details
A.	Certificates	Certificates	i) Pan Card ii) Professional Tax clearance certificate. iii) Vat clearance certificate. Iv) Acknowledgement of IT return (For last 3 hrs.) v) GST registration.
B.	Company Details	Company Details-1	i) Trade License ii) Partnership Deed, iii) Society Registration, iv) Power of Attorney, iv) MoA/MoU etc. as applicable.
C.	Financial Info	Financial Info-1	i) Audited Balance Sheet (For last 3 yrs.).
D.	Credential	Credential -1	i) Credential, Work Order, Payment certificate, Bank Solvency Certificate. Engineers Certificate Etc.

Financial Bid:-

- i) The financial bid should contain the following documents in one cover (folder) i.e. Bill of Quantities (BOQ). The contractor is to quote the rate through on line in the space marked for quoting rate in the BOQ.
- ii) Only downloaded copies of the above documents are to be uploaded, virus scanned & digitally signed by the contractor.

6. Opening & Evaluation of Tender:-

Opening of Technical Bid:

- i) Technical bid will be opened by the Superintending Engineer, Circle-I, R&B Sector, KMDA Intending tenderer may remain present if they so desire. Statutory Cover (folder) would be opened first & if found in order and correct Non Statutory Cover (folder) will be opened. If there is any deficiency in the Statutory & Non statutory documents the tender will summarily be rejected.
- ii) Decrypted (transformed in to readable formats) documents of the non-statutory cover will be downloaded and then ready for evaluation.
- iii) List of technically qualified tenderers would be uploaded.

NB: While evaluation, it may summon of the tenderers & seek clarification/ information or additional documents or original hard copy of any of the documents already submitted & if they are not produced within the stipulated time frame, their bid will liable for rejection.

Opening and evaluation of Financial Bid:

- i) Financial bid of tenderers declared technically eligible by the Tender Evaluation Office will be opened electronically from the web portal on the prescribed date and time.

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7. Penalty for suppression / distortion of facts:

During evaluation process if the bidder suppressed / distorted any facts then the bidder shall be cancel from the tender and the detailed procedure for taking penal measure of suspension and debarment of suppliers and consultants in the memorandum no. 547-W(C)/1M-387/15 Dated 16/11/2015 and it's subsequent amendment notified vide memorandum no.724-W(C)/1M-953/19 dated 19.12.2019 of works branch, PWD, GoWB shall be followed for department & suspension of bidders & agencies selected for execution public works for their false declaration or forgery or falsification of records submitted or failure to executed committed contract or for their failure to perform contractual obligation and there by resulting delay for execution of public works.

8. Bidder should inspect the proposed site and gather all necessary information required form them to make an informed bid. Bidder shall also take into consideration likely hindrances that may occur and put in a bid accordingly. Submission of bid, shall be deemed to have been made, after proper inspection of sites and gather all required information for carrying out the work.

Superintending Engineer,
Circle – I, R&B Sector, KMDA.

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Notice Inviting Request for Proposal (RFP)

The Government of West Bengal has decided to undertake the Construction of 4 lane Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (Near New Town) with Connectivity to Salt Lake Sector-V” through Engineering, Procurement and Construction (EPC) Mode Trunkey contract Basis by Kolkata Metropolitan Development Authority (KMDA) [Implementing Agency/Authority/Employer].

KMDA is engaged in the development of roads & bridges in the city of Kolkata and as part of this endeavor, it has been decided to undertake this proposed elevated corridor connecting the E.M. Bypass with New Town having access to Sector V of Salt Lake.

Accordingly, the Notice Inviting Bid no 00/SE/C-I/R&B/KMDA/2024-2025 Dated 00.00.2024 was published by KMDA by inviting bids from eligible, reliable, resourceful, bonafide and experienced firms / companies / individual contractors for the following project.

State	City	Components (More or Less)		Name of work	Earnest Money	Completi on period	Mainten ance period
West Bengal	Kolkata	4 Lane Fly over (2X7.5)m Main flyove	5.99 Km	Construction of 4 Lane Elevated Corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (near New Town) with connectivity to Salt Lake, Sector V. through Engineering, procurement and construction (EPC) Mode Trunkey contract Basis.	Rs. 13.59 Cr	24(Twenty four) Months	5 Years
		Up Ramp from Sector-V beside Nalban (1x8.5)m	0.411 Km				
		Down Ramp towards college more (1x6.5)m	0.371km				
		Up Ramp from Salt Lake to Bypass near Ring Road(1x8.5)m	0.313 Km				
		Total length	7.085 Km Say 7.10 Km				

The complete BID document can be viewed/downloaded from official portal <https://wbtenders.gov.in/> or <https://www.kmda.wb.gov.in> from 00.00.2024 to 00.00.2024 (up to 17.00 Hrs. IST). Bid must be submitted online only at <https://wbtenders.gov.in/> on or before 00.00.2024 (up to 15.00 hours IST). Bids received online shall be opened on 00.00.2024 (at 15.00 hours IST). Bid through any other mode shall not be entertained. However, Earnest Money, Power of Attorney and Joint Bidding Agreement etc. shall be submitted by the Bidder on or before 00.05.2024 (at 15.00 hours IST), Please note that the [Ministry/Authority/Implementing Agency] reserves the right to accept or reject all or any of the BIDs without assigning any reason whatsoever.

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DISCLAIMER

The information contained in this Request for Proposal (RFP) document, Addenda, clarification, Corrigendum, etc. provided or to be subsequently provided to Applicants(s), or whether verbally or in documentary or any other form by or on behalf of the Kolkata Metropolitan Development Authority (KMDA) or any of their employees or advisors, is provided to Applicants(s), on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is not an Agreement and is neither an offer nor invitation by the KMDA to the prospective Applicants or any other person. The purpose of this RFP is to provide pre-qualified parties with information that may be useful to them in the formulation of their offer pursuant to this RFP (the "Application"). This RFP includes statements, which reflect various assumptions and assessments arrived at by the KMDA in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Applicant may require. This RFP may not be appropriate for all persons, and it is not possible for the KMDA, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in this RFP, may not be complete, accurate, adequate or correct. Each Applicant should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this RFP and obtain independent advice from appropriate sources.

Information provided in this RFP to the Applicant(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The KMDA accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

KMDA, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way for participation in this Bidding Process.

KMDA also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP. KMDA may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this RFP.

The issue of this RFP does not imply that the KMDA is bound to select and short-list pre-qualified Applications for bid stage or to appoint the selected bidder, as the case may be for the project and KMDA reserves that right to reject all or any of the Applications or Bids without assigning any reason whatsoever.

The Applicant shall bear all its costs associated with or relating to the preparation and submission of its Application including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by KMDA or any other costs incurred in connection with or relating to its application. All such costs and expenses will remain with the Bidder and the Authority shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by an Applicant in preparation or submission of the Application, regardless of the conduct or outcome of the Bidding Process. Reference to KMDA in this disclaimer shall also include its advisors, consultants and employee whether explicitly mentioned as such or not.

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SECTION 1

Invitation for the BID (IFB)

1.0 Introduction

1.1 Background

1.1.1 Kolkata Metropolitan Development Authority(**KMDA**) the **“Authority”/ “Employer”**] is engaged in the development of elevated corridor within the city of Kolkata and as part of this endeavor, the Authority has decided to undertake **Construction of 4 Lane Elevated Corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (near New Town) with connectivity to Salt Lake, Sector V** through an Engineering, Procurement and Construction on (EPC mode) turnkey basis Contract, (the **“Project”**) and has decided to carry out the bidding process for selection of a bidder to whom the Project may be awarded. A brief description of the project may be seen in the Information Memorandum of the Project at the Authority’s website (<https://wbtenders.gov.in> / <https://ww.kmda.wb.gov.in/web> site of state KMDA). Brief particulars of the Project are as follows:

Name of the Work	Length in Km (More or Less)		No of Years for completion of work
Construction of 4 Lane Elevated Corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (near New Town) with connectivity to Salt Lake, Sector V	4 Lane main flyover	5.99 Km	18(Eighteen) months
	Up Ramp from Sector-V beside Nalban	0.411 Km	
	Down Ramp towards college more	0.371 Km	
	Up Ramp from Salt Lake to Bypass near Ring Road	0.313 Km	
	Total Length	7.10 Km	

N.B.:- Intending Bidders shall not have to pay the cost of Bid Document for the purpose of participating in e-procurement process (Ref. Notification No.-199-CRC/2M-10/2012 dated 21.12.2012 of the Secretary, P.W.D, CRC Branch, & No. 452-A/PW/0/10c-35/10 dated 25.7.2011 of the Secretary, P.W.D., Accounts Branch, Govt. of W.B.), but the Selected Bidder shall have to pay the cost of Bid Documents of requisite set during purchase of Bid Documents for execution of formal Agreement.

1.1.2 The selected Bidder (the **“Contractor”**) shall be responsible for designing, engineering, procurement and construction of the Project under and in accordance with the provisions for an agreement of engineering, procurement and construction (**“EPC”**) mode turnkey basis contract to be executed between the Contractor and the Authority. The Contractor shall also be responsible for the maintenance of the project during the Defect Liability Period, which is expected to be as per clause 1.1.3.

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1.1.3 The scope of work will broadly include construction of new Flyover with rehabilitation of existing pavement, construction and/or rehabilitation of major and minor bridges, culverts, road intersections, interchanges, drains, etc. if any and maintenance of the Project for 5(five) years and Defect Liability Period, which shall also be 5 (five) years.

1.1.4 The tender documents sets forth the detailed terms and conditions for award of the project to the Contractor, including the scope of the Contractor's services and obligations as per Uploaded bidding documents with its Amendment of some clauses of special terms and condition and also in Technical specification.

1.1.5 The statements and explanations contained in this RFP are intended to provide a better understanding to the Bidders about the subject matter of this RFP and should not be construed or interpreted as limiting in any way or manner the scope of services and obligations of the Contractor or the Authority's rights to amend, alter, change, supplement or clarify the scope of work, the work to be awarded pursuant to this RFP or the terms thereof or herein contained. Consequently, any omissions, conflicts or contradictions in the Bidding Documents including this RFP are to be noted, interpreted and applied appropriately to give effect to this intent, and no claims on that account shall be entertained by the Authority.

1.1.6 The Authority shall receive BIDs pursuant to this RFP in accordance with the terms set forth in this RFP and other documents to be provided by the Authority pursuant to this RFP (collectively the "**Bidding Documents**"), and all BIDs shall be prepared and submitted in accordance with such terms on or before the BID due date specified in Clause 1.3 for submission of BIDs (the "**BID Due Date**").

1.2 Brief description of Bidding Process

1.2.1 The Authority has adopted a single stage two part system (referred to as the "**Bidding Process**") for selection of the Bidder for award of the Project. Under this process, the bid shall be invited under two parts. Eligibility and qualification of the Bidder will be first examined based on the details submitted documents under first part (Technical Bid) with respect to eligibility and qualifications criteria prescribed in this RFP. (The "**Bidder**", which expression shall, unless repugnant to the context, include the members of the Joint Venture). The Financial Bid under the second part shall be opened of only those Bidders who's Technical Bids are responsive to eligibility and qualifications requirements as per this RFP.

[The Authority/Employer has issued guidelines (see Annex- VII of Appendix-IA of RFP) for qualification of bidders seeking to acquire stakes in any public sector enterprise through the process of disinvestment. These guidelines shall apply mutatis mutandis to this Bidding Process. The Authority shall be entitled to disqualify any Bidder in accordance with the aforesaid guidelines at any stage of the Bidding Process. Bidders must satisfy themselves that they are qualified to bid, and should give an undertaking to this effect in the form at Appendix-IA]

1.2.2 Interested bidders are being called upon to submit their BID in accordance with the terms specified in this Bidding Document. The Bid shall be valid for a period of 180 days from the date specified in Clause 1.3 for submission of BIDs (the Bid Due Date).

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1.2.3 The complete Bidding Documents for the Project is enclosed for the Bidders. The aforesaid documents and any addenda issued subsequent to this RFP Document will be deemed to form part of the Bidding Documents.

1.2.4 A Bidder is required to submit earnest money Rs 13.59 crores as per NIT along with its BID. Earnest money of the unsuccessful bidders will be returned after issuance of LoA to the successful bidder. However, the Selected Bidder who's Earnest Money shall be retained and converted to the security deposit.

1.2.5 Bidders are advised to examine the Project in greater detail, and to carry out, at their cost, such studies as may be required for submitting their respective BIDs for award of the contract including implementation of the Project.

1.2.6 BIDs will be evaluated for the Project on the basis of the lowest cost required by a Bidder for implementing the Project (the "**BID Price**"). The total time allowed for completion of construction under the Agreement (the "Construction Period") and the period during which the Contractor shall be liable for maintenance and rectification of any defect or deficiency in the Project after completion of the Construction Period (the "**Defect Liability Period**") shall be pre-determined, and are specified in the Agreement forming part of the Bidding Documents. In this RFP, the term "**Lowest Bidder**" shall mean the bidder who is quoting the lowest BID price.

1.2.7 Generally, the Lowest Bidder shall be the selected Bidder. In case such Lowest Bidder withdraws or is not selected for whatsoever any reason, the Authority/ Employer shall be deemed to be cancelled the tender and fresh tender will be invited.

1.2.8 Other details of the process to be followed under this bidding process and the terms thereof are spelt out in this RFP.

1.2.9 Any queries or request for additional information concerning this RFP shall be submitted by e-mail to the officer designated in Clause 2.11.4 below with identification/ title: "Queries / Request for Additional Information: RFP for –The Project.

Sl. No	Description Remarks	Remarks
A	e-NIT with its addenda & Corrigenda as may be issued time to time.	Uploaded & to be uploaded
B	Terms & Conditions of the e-NIT	Uploaded
C	Request for proposal, General condition of contract, Special condition of contract, Special terms and condition, Technical specification , Billing schedule etc.	Uploaded
D	Amendment of Bidding Documents	Uploaded & to be uploaded
E	Information about the site of the project	Uploaded
F	Replies of Pre-Bid Quarries	to be uploaded

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1.3 Schedule of Bidding Process:-

The authority shall endeavor to adhere to the following schedule:-

Sl. No.	Event Description	Date
1	Invitation of NIT	24.07.2024 onwards
2	Last date for receiving queries	05.08.2024 (16 Hrs)
3	Pre-BID meeting	01.08.2024 (14:00 Hrs)
4	Authority response to queries latest by	09.08.2024 (14 Hrs)
5	Last date of Request for BID Document	02.09.2024 (14 Hrs)
6	Opening of Technical BID	04.09.2024 (14 Hrs)
7	Declaration of eligible / qualified bidders	To be notified later
8	Opening of Financial BID	To be notified later
9	Letter of Award (LOA)	To be notified later
10	Validity of BID	180 days from BID Due Date
11	Signing of Agreement	Within 15 days of award of LOA

1.4. Estimated Project Cost is the cost of civil, electrical & Instrumentation works for which Bid is invited.

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SECTION-2
INSTRUCTIONS TO BIDDERS (ITB)

A. GENERAL

2.1. General terms of Bidding

2.1.1 In case of Joint venture, the lead partner or any other member cannot apply as a single bidder. If during the course of evaluation of the bid, it is found that any member of the JV has applied separately as single bidder also, in that case both/ all the bids as single bidder as well as JV shall be treated as cancelled.

2.1.2 An International Bidder bidding individually or as a member of a Joint Venture shall have to comply the statutory requirements as per Indian Law.

2.1.3 The Bidders who are expected to carry out their own surveys, investigations and other detailed examination of the Project before submitting their Bids. The costs of visiting the site and all preliminary works before bids shall be at the Bidder's own expense. It shall be clearly understood that no claims for extra payments on this account shall be entertained at any stage.

2.1.4 Notwithstanding anything to the contrary contained in this RFP, the detailed terms specified in the Agreement shall have overriding effect; provided, however, that any conditions or obligations imposed on the Bidder hereunder shall continue to have effect in addition to its obligations under the Agreement.

2.1.5 In non-wet land region in order to cater huge surface run off from deck slab in definite direction provision of rider drain is essential.

2.1.6 The BID shall be furnished in the format exactly as per Appendix-I i.e. Technical Bid as per Appendix IA and Financial Bid as per Appendix IB. BID amount shall be indicated clearly in both figures and words, in Indian Rupees in prescribed format of Financial Bid and it will be signed by the Bidder's authorized signatory. In the event of any difference between figures and words, the amount indicated in words shall be taken into account. The Bid Amount should include the costs i.e. GST, CESS etc.

2.1.7 The Bidder shall deposit an Earnest Money of Rs.13.59 cores in accordance with the provisions of this RFP. The Bidder has to provide the Earnest Money in the form of a Bank Guarantee from a Nationalized Bank acceptable to the Authority, as per format at Appendix-VI. **Earnest Money deposit (EMD)** is also to be remitted by the Tenderer in favour of **KMDA**. Payable at **KOLKATA**, as mentioned in the **NIT** through Net- Banking/ RTGS/NEFT in respect of the Tender ID as per requirement of e-Procurement System of Government of West Bengal (<https://wbtenders.gov.in/>).

The BID shall be summarily rejected if it is not accompanied by the Earnest Money. (except State Govt Enterprises who are exempted as per rule. Ref: 430(3)-W(C)/1M-208/15 dt 31/08/2015 of Jt Sec, PWD) As per notification no. 38-W(C)/1M-208/15 dt. 17.01.2017 of P.W.D., Works Branch, Govt. of West Bengal, the three State Government Enterprises, viz. Mackintosh Burn Ltd., Westinghouse Saxby Farmer Ltd. and Britannia Engineering Ltd. are exempted from depositing of Earnest Money/ Bid Security for participating in the instant Bid subject to the condition that they will furnish security deposit(s) as applicable if selected as a successful bidder in the bid.

2.1.8 The Bidder should submit a Power of Attorney as per the format at Appendix-II, authorizing the signatory of the BID to commit the Bidder.

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2.1.9 The validity period of the Bank Guarantee, shall not be less than 180 (one hundred and eighty) days from the BID Due Date, inclusive of a claim period of 60 (Sixty) days, and may be extended as may be mutually agreed between the Authority/Employer and the Bidder. The BID shall be summarily rejected if it is not accompanied by the Earnest Money. The Earnest Money shall be refundable no later than 150 (one hundred and fifty) days from the BID Due Date except in the case of the Selected Bidder whose Earnest Money shall be retained till it has provided a Performance Security under the Agreement.

2.1.10 Drainage network of special kind is also required for discharge of storm water in the Ramsar stretch of length about 1.5 km. We cannot discharge surface storm water mixed with hydrocarbons to wet land in any case.

2.1.11 In case the Bidder is a Joint Venture, the Members thereof should furnish a Power of Attorney in favour of the Lead Member in the format at Appendix-III. In case the Bidder is a Joint Venture, Joint Bidding Agreement in the format at Appendix IV shall be submitted by the bidder.

2.1.12 Any condition or qualification or any other stipulation contained in the BID shall render the BID liable to rejection as a non-responsive BID.

2.1.13 The BID and all communications in relation to or concerning the Bidding Documents and the BID shall be in English language.

2.1.14 In wetland area construction of cofferdam for temporary passage road to pass machineries equipment's at the construction point in the wet land area of about 1.5 Km stretch is not allowed as per submitted EIA and EMP report to the National Wetland committee.

2.1.15 The documents including this RFP and all attached documents, provided by the Authority/Employer are and shall remain or become the property of the Authority/Employer and are transmitted to the Bidders solely for the purpose of preparation and the submission of a BID in accordance herewith. Bidders are to treat all information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their BID. The provisions of this Clause 2.1.13 shall also apply mutatis mutandis to BIDs and all other documents submitted by the Bidders, and the Authority will not return to the Bidders any BID, document or any information provided along therewith.

2.1.16 This RFP is not transferable.

2.1.17 Any award of Project pursuant to this RFP shall be subject to the terms of Bidding Documents and also fulfilling the criterion as mentioned in clause 2.2.

2.1.18 In case the Bidder is a Joint Venture, it shall comply with the following additional requirements:

(a) Number of members in a Joint Venture shall not exceed 3 (Three).

(b) Subject to the provisions of clause (a) above, the Bid should contain the information required for each Member of the Joint Venture.

(c) Members of the Joint Venture shall nominate one member as the lead member (the **"Lead Member"**). Lead Member shall met at least 60% requirement of Bid Capacity,

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Technical and Financial Capacity, required as per Clause 2.2.2.1, 2.2.2.2 & 2.2.2.3. The nomination(s) shall be supported by a Power of Attorney, as per the format at Appendix-III, signed by all the other Members of the Joint Venture. Other Member(s) shall meet at least 20% requirement of Bid Capacity, Technical and Financial Capacity required as per Clause 2.2.2.1, 2.2.2.2(i) & 2.2.2.3 and the JV as a whole shall cumulatively/collectively fulfill the 100% requirement;

(d) The Bid should include a brief description of the roles and responsibilities of individual members, particularly with reference to financial, technical and defect liability obligations.

(e) An individual Bidder cannot at the same time be member of a Joint Venture applying for this Bid. Further, a member of a particular Bidder Joint Venture cannot be member of any other Bidder Joint Venture applying for this bid.

(f) Members of the Joint Venture shall have entered into a binding Joint Bidding Agreement, substantially in the form specified at Appendix IV (the “**Jt. Bidding Agreement**”), for the purpose of making the Application and submitting a Bid in the event of being pre-qualified. The Jt. Bidding Agreement, to be submitted along with the Application, shall, inter alia:

(i) Convey the commitment(s) of the Lead Member in accordance with this RFP, in case the contract to undertake the Project is awarded to the Joint Venture; and clearly outline the proposed roles & responsibilities, if any, of each member.

(ii) Commit the approximate share of work to be undertaken by each member.

(iii) Include a statement to the effect that all members of the Joint Venture shall be liable jointly and severally for all obligations of the Contractor in relation to the Project until the completion of the Project until the Defects Liability Period is achieved in accordance with the bidding documents;

(g) Except as provided under this RFP, there shall not be any amendment to the Jt. Bidding Agreement.

(h) No Joint Venture up to Estimate Project Cost of Rs. 100 crores (One Hundred Crores). However the joint venture of the any estimated project cost is possible in case of maintenance works to be taken up on EPC mode turnkey basis.

2.1.19 While bidding is open to persons from any country, the following provisions shall apply:

(a) Where, on the date of the Application, grater or equal to 50% (Fifty per cent) of the aggregate issued, subscribed and paid up equity share capital in the L-1 Bidder or its Member is held by persons resident outside India or where a Bidder or its Member is controlled by persons resident outside India, then the eligibility and award of the project to such L-1 Bidder shall be subject to approval of the competent authority from national security and public interest perspective as per the instructions of the Government of India applicable at such time. The decision of the authority in this behalf shall be final and conclusive and binding on the Bidder;

(b) Further, where the LoA of a project has been issued to an agency, not covered under the category mentioned above, and it subsequently wishes to transfer its share capital in favour of another entity who is a resident outside India or where a Bidder or

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its Member is controlled by persons resident outside India and thereby the equity capital of the transferee entity exceeds 50% or above. any such transfer of equity capital, shall be with the prior approval of the competent authority from national security and public interest perspective as per the instructions of the Government of India applicable at such point in time.

2) The holding or acquisition of equity control, as above shall include direct or indirect holding acquisition, including by transfer of the direct or indirect legal or beneficial ownership or control, by persons acting for themselves or in concert and in determining such holding or acquisition, the Authority shall be guided by the principles, precedents and definitions contained in the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulations, 2011, or any substitute thereof. as in force on the date of such acquisition.

(3) The Bidder shall promptly inform the authority of any change in the shareholding, as above and failure to do so shall render the Bidder liable for disqualification from the Bidding process.

(4) In case the L-1 Applicant under(a) above is denied the security clearance, for whatsoever reasons , the tender shall be deemed to be cancelled and fresh tender will be invited.

2.1.20 Notwithstanding anything to the contrary contained herein, in the event that the Bid Due Date falls within three months of the closing of the latest financial year of a Bidder, it shall ignore such financial year for the purposes of its Bid and furnish all its information and certification with reference to the 5 (five) years, preceding its latest financial year. For the avoidance of doubt, financial year shall, for the purposes of a Bid hereunder, mean the accounting year followed by the Bidder in the course of its normal business.

2.1.21 Any entity which has been barred by the GoWB or its implementing agencies for the works of Expressways, Flyover works, and the bar subsists as on the date of Application, would not be eligible to submit the BID, either individually or as member of a Joint Venture.

2.1.22 The Bidder including individual or any of its Joint Venture Member should, in the last 2 (two) years, have neither failed to perform for the works of Flyovers, Expressways, National Highways, ISC &EI works, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Bidder including individual or any of its Joint Venture Member, as the case may be, nor has been expelled or terminated by GoWB or its implementing agencies for breach by such Bidder including individual or any of its Joint Venture Member.

2.1.22.1 The Bidder including individual or any of its Joint Venture Member may provide details of all their on-going projects along-with updated stage of litigation, if so, against the Authority / Governments.

2.1.22.2 The Bidder including individual or any of its Joint Venture Member may also provide details of updated on-going process of blacklisting if so, under any contract with Authority / Government.

2.1.22.3 Details of all their on-going projects in the format of Annex-VIII of Appendix of IA.

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2.1.22.4 The Authority reserves the right to reject an otherwise eligible bidder on the basis of the information provided under clause 2.1.19. The decision of the Authority in this case shall be final.

2.2 Eligibility criteria and qualification requirements of Bidder

2.2.1 For determining the eligibility of Bidder the following shall apply:

The qualified of a bidder will be ascertained on the basis of the digitally signed documents in support of the minimum criteria as mentioned herein below. If any document submitted by a bidder is either manufactured or false/fabricated, in such cases the qualification of the bidder will be rejected outright at any stage without any prejudice to the rights of KMDA.

a) The intending bidder must have successfully completed similar type of work in respect of construction of Elevated corridor/Bridge/Flyover/ROB / Railway project of corridor of Government / Govt. Undertaking / Autonomous Bodies / Semi-Govt. / Statutory Bodies/ Local Bodies etc. for a minimum amount of Rs.271.64 crores (Two Hundred Seventy-One Point Sixty-Four) within last 7(seven) years.

b) Shall produce credentials of one single running work of similar nature of Project which has been completed to the extent of 80% or more and value of executed part of which is not less than the desired value. (In case of running works, only those bidders who will submit the current certificate of satisfactory running work from the concerned Executive Engineer, or equivalent competent authority will be considered eligible for the present tender. In the required certificate it should be clearly stated that the work is in progress satisfactorily and also that no penal action has been initiated against the executing agency, i.e. the tenderer/bidder.)

C) Particulars regarding Joint Venture/Consortium:-

i) One of the Partners of any Joint Ventures/Consortium has to be designated as Lead Partner and the same will be mentioned in MoA/MoU

ii) Bid from Joint Ventures / Consortium shall be accompanied by a copy of MOA/MOU on a stamp paper of Rs.100.00 outlining the joint interest to work on the project and specifying the other terms of agreement.

iii) The lead partner must hold 51% equity capital of the Company to be formed between them during the Tenure of contract implementation.

iv) The successful joint ventures/consortium will have to form a special purpose vehicle (S.P.V) register the same under Indian Company's Act.

v) The lead partner must have credential and satisfactory completion of same nature of works / civil work of completion cost not less than 50% value of qualifying amount i.e. 50% of the value of work under present tender in a single contract under any Govt./Semi-Govt. organization/Autonomous body as principal employer within last 7(Seven) Years.

vi) Each of the other partners shall meet individually not less than 25% of the qualifying criteria mentioned above under any Govt./semi-Govt. organization

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/Autonomous body as principal employer within last 7 (seven) years. However the lead partner along with other partner/partners should jointly meet at least 100% of the general qualifying criteria. Clause No.2,2.1 (a),(b) above. But as mandatory minimum experience as per clauses 2(f) must be demonstrated by all the JV members.

- vii) The lead partner shall have to apply for tender on behalf of joint ventures/consortium along with MOA/MOU.
 - viii) In case of any litigation or in the event of any default arises during the execution/contract period of the agreement, the lead partner will remain fully responsible.
 - ix) The successful joint ventures/consortium will have to submit GST Registration/PAN CARD /TRADE LICENSE immediately after issuance of L.O.I.
 - x) In case of Joint venture, the lead partner or any other member cannot apply as a single bidder. If during the course of evaluation of the bid, it is found that any member of the JV has applied separately as single bidder also, in that case both/ all the bids as single bidder as well as JV shall be treated as cancelled.
- d) The bidder (in case of a consortium, all the members taken together) shall have the requisite engineering and management personnel and other personnel as is required for undertaking the Services and construction equipment of its own, either purchased or taken on hire.
- e) The completed Project shall comprise of preparation of General arrangement drawing, structural design and drawing and related inter-disciplinary services at any place(s) in India during the last 7(Seven) financial years from the date of publication of the tender. If such Project has been executed by the bidder as a member of a Joint Venture, in such a case, the bidder's credentials will be considered in proportion to their shareholding in the Joint Venture in terms of the Joint Venture Agreement.
- All the joint venture partners have to be registered in India.

f) As mandatory minimum experience.

a) Technical:

The sole Bidder individually (Not with JV) shall demonstrate following experiences in successfully Completed EPC projects supported on single pier within last 7(seven) years from the bid due date.

1. 4 Lane Road Flyover/ROB/Elevated corridor of single structure of length at least 5 KM having predominant span at least 35m with PSC girder/Segment in super structure constructed with launching activity of pre-stressed concrete super-structure/steel super-structure of length minimum 4 km in a single year with heavy duty crane and or launching girder, the structure should also have at least one obligatory span of at least 90m (width not less than 12.5m) with steel super structure at a height 2nd or above over road intersection. The entire structure should be constructed over large diameter (not less than 1.2m) pile foundation.

2. 4 Lane Road Flyover/ROB/Elevated corridor structure constructed at the height of 15m or above of at least 200m length in any Urban place*.

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3. 1.5 or 2 Lane Viaduct-Ramp structure constructed in a Road Flyover/ROB/Elevated corridor structure having Radius 50m or less in any urban place*.

* “in any Urban Place” means the constructed structures must belong to the metro cities or may include any area under any Development authority under the Town and Country Planning act of any other state or specified in the completion certificate as Urban Project.

b) Financial

i) The Bidder should not have booked loss in more than two financial years out of last seven consecutive Financial years from the bid due date.

(h) A Bidder shall not have a conflict of interest (the “**Conflict of Interest**”) that affects the Bidding Process. Any Bidder found to have a Conflict of Interest shall be disqualified and liable for forfeiture of the BID Security or Performance Security as the case may be. A Bidder shall be deemed to have a Conflict of Interest affecting the Bidding Process, if:

- (i) the Bidder, its Joint Venture Member (or any constituent thereof) and any other Bidder, its Member or any Member of its Joint Venture thereof (or any constituent thereof) have common controlling shareholders or other ownership interest; provided that this disqualification shall not apply in cases where the direct or indirect shareholding of a Bidder, or its Joint Venture Member thereof (or any shareholder thereof having a shareholding of more than 5% (five percent) of the paid up and subscribed share capital of such Bidder, or its Joint Venture Member, as the case may be), in the other Bidder, its Joint Venture Member is less than 5% (five percent) of the subscribed and paid up equity share capital thereof; provided further that this disqualification shall not apply to any ownership by a bank, insurance company, pension fund or a public financial institution referred to in section 4A of the Companies Act 1956. For the purposes of this Clause 2.2.1(c), indirect shareholding held through one or more intermediate persons shall be computed as follows: (aa) where any intermediary is controlled by a person through management control or otherwise, the entire shareholding held by such controlled intermediary in any other person (the “**Subject Person**”) shall be taken into account for computing the shareholding of such controlling person in the Subject Person; and (bb) subject always to sub-clause (aa) above, where a person does not exercise control over an intermediary, which has shareholding in the Subject Person, the computation of indirect shareholding of such person in the Subject Person shall be undertaken on a proportionate basis; provided, however, that no such shareholding shall be reckoned under this sub-clause (bb) if the shareholding of such person in the intermediary is less than 26% of the subscribed and paid up equity shareholding of such intermediary; or
- (ii) a constituent of such Bidder is also a constituent of another Bidder; or

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- (iii) such Bidder, or any of its Joint Venture Member thereof receives or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Bidder, or any of its Joint Venture Member thereof or has provided any such subsidy, grant, concessional loan or subordinated debt to any other Bidder, its Member or any of its Joint Venture Member thereof; or
 - (iv) such Bidder has the same legal representative for purposes of this Application as any other Bidder; or
 - (v) such Bidder, or any of its Joint Venture Member thereof has a relationship with another Bidder, or any of its Joint Venture Member thereof, directly or through common third party/ parties, that puts either or both of them in a position to have access to each other's' information about, or to influence the Application of either or each other; or
 - (vi) such Bidder, or any of its Joint Venture Member thereof has participated as a consultant to the Authority in the preparation of any documents, design or technical specifications of the Project.
- (j) A Bidder shall be liable for disqualification and forfeiture of BID Security, if any legal, financial or technical adviser of the Authority in relation to the Project is engaged by the Bidder, its Member or any Associate thereof, as the case may be, in any manner for matters related to or incidental to such Project during the Bidding Process or subsequent to the (i) issue of the LOA or (ii) execution of the Agreement. In the event any such adviser is engaged by the selected Bidder or Contractor, as the case may be, after issue of the LOA or execution of the Agreement for matters related or incidental to the project, then notwithstanding anything to the contrary contained herein or in the LOA or the Agreement and without Prejudice to any other right or remedy or the Authority, including the forfeiture and appropriation of the BID Security or Performance Security, as the case may be, which the Authority may have there under or otherwise, the LOA or the Agreement, as the case may be, shall be liable to be terminated without the Authority being liable in any manner whatsoever to the Selected Bidder or Contractor for the same. For the avoidance or doubt, this disqualification shall not apply where such adviser was engaged by the Bidder, its Member or Associate in the past but its assignment expired or was terminated 6 (six) months prior to the date of issue of this RFP. Nor will this disqualification apply where such adviser is engaged after a period of 3 (three) years from the date of commercial operation of the Project.

2.2.2 Qualification requirements of Bidders:

2.2.2.1 BID Capacity

Bidders who inter-alia meets the minimum qualification criteria will be qualified only if their available BID capacity is more than the total BID value. The available BID capacity will be calculated as per following, based on information mentioned at Annex-VI of Appendix-IA:

Assessed Available BID capacity = **(A*N*2.5 – B +C)**, Where

N= Number of years prescribed for completion of work for which Bid is invited.

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A = Maximum value of civil engineering works in respect of **EPC Projects** executed in any one year during the last five years (updated to the price level of the year indicated in table below under note) taking into account the completed as well as works in progress. The EPC projects include turnkey project/ Item rate contract/ Construction works.

B = Value (updated to the price level of the year indicated in table below under note) of existing commitments, works for which LOA issued and on-going works to be completed during the period of completion of the works for which BID is invited.

C= The amount of bonus received if any. In EPC project during last5 years (up dated to the price level of the year indicated table below.

Note: The Statement showing the value of all existing commitments, works for which LOA issued and ongoing works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Client or its Engineer-in-charge not below the rank of Executive Engineer or equivalent in respect of EPC Projects or Concessionaire / Authorized Signatory of SPV in respect of BOT Projects and verified by Statutory Auditor. The factor for the year for updation to the price level is indicated as under:

Year	Year-1	Year-2	Year-3	Year-4	Year-5
Up-dation factor	1.00	1.05	1.10	1.15	1.20

2.2.2.2 Technical Capacity

- (i) For demonstrating technical capacity and experience (the “Technical Capacity”), the Bidder shall, over the past 5 (five) financial years preceding the Bid Due Date, have received payments for construction of Eligible Project(s), or has undertaken construction works by itself in a PPP project, such that the sum total thereof, as further adjusted in accordance with clause 2.2.2.5 (i) & (ii), is more than Rs.1359.06 crore (Rupees one thousand three hundred fifty nine point six Crores)] (the “**Threshold Technical Capacity**”) 7 .
- (ii) Provided that at least one similar work of Rs. 271.81crores shall have been completed from the Eligible Projects in Category (4) specified in Clause 2.2.2.5. For this purpose, a project shall be considered to be completed, if more than 90% of the value of work has been completed and such completed value of work is equal to or more than 169.88 Crores.
- (iii) The sole Bidder or in case the Bidder being a Joint Venture, any member of Joint Venture shall necessarily demonstrate additional experience in construction of specialized projects of major bridges/tunnels/RoBs/Flyovers/Elevated corridor/Railway elevated corridor etc. in the last 7(Seven) financial years preceding the Bid Due date/ within the last 7(Seven) years from the date of publication of NIT. (“**Mandatory Experience**” in below)

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a. Above mentioned structure of length at least 3 km having predominant single span at least 35 m with PSC Girder or Segment in superstructure/RCC I girder, constructed over large diameter (not less than 1.2m) pile foundation.

b. Above mentioned structure at the height of 15m or above of at least 200m length and at least one Span of 60m by steel box girder/truss - both the structures must be constructed in any Urban place*.

c. 1.5 or 2 Lane Viaduct-Ramp of above-mentioned structure having Radius not less than 50m.

* “in any Urban Place” means the constructed structures must belong to the metro cities or specified in the completion certificate as Urban Project.

- (iv) The **updation factor** to update the price of the eligible projects for the year indicated in table below)

Year	Year-1	Year-2	Year-3	Year-4	Year-5
Up-dation factor	1.00	1.05	1.10	1.15	1.20

2.2.2.3 Financial Capacity:

- (i) The Bidder shall have a minimum Net Worth⁹ (the “Financial Capacity”) of Rs.33.98 crore (Rs. thirty three point nine eight)] at the close of the preceding financial year.

[7 This amount should be as follows:

Sl. No	Estimated Project Cost (EPC) of the Project being invited	Threshold Technical Capacity
1	Estimated Project Cost < = 100 Crore	1.0 time of EPC
2	Estimated Project Cost > 100 Crore & < = 500 Crore	1.5 times of EPC
3	Estimated Project Cost > 500 Crore	2 times of EPC

[⁹ Net worth has been adopted as the criterion for assessing financial capacity since it is a comprehensive indication of the financial strength of the Applicant.]

- (ii) The Bidder shall have a average Annual Turnover (updated to the price level of the year indicated in table below) Rs.1700 Crores (Rs. One thousand seven hundred only)] for the last 5 (Five) financial years

Year	Year-1	Year-2	Year-3	Year-4	Year-5
Up-dation factor	1.00	1.05	1.10	1.15	1.20

- (iii) The bidder should have positive PBT (Profit before tax) in last 3(5) financial year from bid due date.

2.2.2.4 In case of a Joint Venture:

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(i) The Bid Capacity, Technical Capacity and Financial Capacity of all the Members of Joint Venture would be taken into account for satisfying the above conditions of eligibility. Further, Lead Member shall meet at least 60% requirement of Bid Capacity, Technical and Financial Capacity as per Clause 2.2.2.1, 2.2.2.2 (i) and 2.2.2.3 and each of other JV members shall meet at least 20% requirement of Bid Capacity, Technical and Financial Capacity individually as per Clause 2.2.2.1, 2.2.2.2(i) and 2.2.2.3. For avoidance of doubt it is further clarified that the Joint Venture must collectively and individually satisfy the above qualification criteria i.e. JV shall cumulatively/collectively fulfill the 100% requirement.

(ii) For requirement of 2.2.2.2 (ii), one similar work of Rs. 169.88 crores should have been completed from the Eligible Projects in Category 1 and/or Category 3 specified in Clause 2.2.2.5 individually by any of the JV members as a single work.

2.2.2.5 Categories and factors for evaluation of Technical Capacity:

(i) Subject to the provisions of Clause 2.2.2 the following categories of experience would qualify as Technical Capacity and eligible experience (the "**Eligible Experience**") in relation to **eligible projects** as stipulated in Clauses 2.2.2.6 (i) & (ii) (the "Eligible Projects"). In case the Bidder has experience across different categories, the experience for each category would be computed as per weight of following factors to arrive at its aggregated Eligible Experience.

Category	Project / Construction experience on Eligible Projects	Factors
1	Project in highways sector that qualify under Clause 2.2.2.6 (i)	1.0
2	Project in core sector that qualify under Clause 2.2.2.6 (i)	0.70
3	Construction in highways sector that qualify under Clause 2.2.2.6 (ii)	1.0
4	Construction in core sector that qualify under Clause 2.2.2.6 (ii)	0.70

(ii) The Technical capacity in respect of an Eligible Project situated in a developed country which is a member of OECD shall be further multiplied by a factor of 0.5 (zero point five) and the product thereof shall be the Experience Score for such Eligible Project.

(iii) For the purpose of this RFP:

(a) highways sector would be deemed to include highways, expressways, bridges, tunnels, runways, Railways (construction/re-construction of railway tracks, yards for keeping containers etc.), Metro Rails and Ports (construction/re-construction of Jetties, any other linear infrastructure including bridges etc.) and

(b) core sector would be deemed to include civil construction cost of, power sector, commercial setups (SEZs etc.), airports, , industrial parks/ estates, logistic parks, pipelines, irrigation, water supply, sewerage and real estate development.

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(I) In case of projects executed by applicant under category 3 and 4 as a member of Joint Venture, the project cost should be restricted to the share of the applicant in the joint venture for determining eligibility as per provision under clause 2.2.2.2 (ii). In case Statutory Auditor certifies that, the work of other member(s) is also executed by the applicant, then the total share executed by applicant can be considered for determining eligibility as per provision under clause 2.2.2.2 (ii).

(II) Maintenance works are not considered as eligible project for evaluation as per instruction No.6 to Annex-IV. As such works with nomenclature like PR, OR, FDR,SR, site/micro grading, surface renewal, resurfacing work, Tarring, B.T. surface work, temporary restoration, urgent works, periodic maintenance, repair & rehabilitation, one time maintenance, permanent protection work of bank, external pre stressing, repair of central hinge, short term OMT contract of NHAI, any type of work related to border fencing, work of earthwork alone, construction of buildings/ hostels/hospitals, etc, or not specified, shall not be considered.

(III) The works such as improvement in Riding Quality work (IRQP/IRQ), shall be considered for Technical Capacity [2.2.2.2 (i)] but not for single completed works [2.2.2.2 (ii)]

(IV) Project in Highway sector shall constitute the following for the purpose of consideration under category 1 or 3 as applicable, if:

- (i) Widening / reconstruction / up-gradation works on NH / SH or on any category of road taken up under CRF, ISC/ EI, SARDP, LWL.
- (ii) Widening/ re-construction/up-gradation works on MDRs with loan assistance from multilateral agencies or on BOT basis,
- (iii) Widening/ reconstruction / up-gradation work of roads in Municipal corporation limits, construction of Bypasses,
- (iv) Construction of stand- alone bridges, ROBs, tunnels , Railway elevated Corridor Long term OMT works of NHAI/MoRT&H.

(V) The projects with the title of RIDF, PMGSY road, link road, city roads, rural road, sector/ municipality road, Bridges for railway line, work of metro rails (bridges/ tunnel), real estate projects which demonstrate road development/construction bridges or culverts may be considered under category- 4.

(VI) In case both the estimated cost of project and revised cost of project are provided, the revised cost of project shall be considered for evaluation.

2.2.2.6 Eligible Experience on Eligible Projects in respect of each category:

- (i) For a project to qualify as an Eligible Project under Categories 1 and 2:

(a) It should have been undertaken as a PPP project on BOT, BOLT, BOO, BOOT or other similar basis for providing its output or services to a public sector entity or for providing non-discriminatory access to users in pursuance of its charter, concession or contract, as the case may be. For the avoidance of doubt, a project which constitutes a natural monopoly such as an airport or port should normally be included in this category even if it is not based on a long-term agreement with a public entity;

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(b) the entity claiming experience should have held, in the company owning the Eligible Project, a minimum of 26% (twenty six per cent) equity during the entire year for which Eligible Experience is being claimed;

(c) the capital cost of the project should be more than 67.95 crores and

(d) the entity claiming experience shall, during the last 7 (Seven) financial years preceding the Bid Due Date, have itself undertaken the construction of the project for an amount equal to at least one half of the Project Cost of eligible projects, excluding any part of the project for which any contractor, subcontractor or other agent was appointed for the purposes of construction.

- (ii) For a project to qualify as an Eligible Project under Categories 3 and 4, the Bidder should have received payments from its client(s) for construction works executed, fully or partially, or work executed and certified by the Engineer-in-charge/Independent Engineer/Authority's Engineer during the 5 (five) financial years immediately preceding the Bid Due Date, and only the amounts (gross) actually received/ work executed, during such 5 (five) financial years shall qualify for purposes of computing the Experience Score. However, receipts of or work executed amount less than Rs 67.95 crore (Rs. Sixty seven point nine seven crore)] shall not be reckoned as receipts for Eligible Projects. For the avoidance of doubt, construction works shall not include supply of goods or equipment except when such goods or equipment form part of a turn-key construction contract / EPC contract for the project. Further, the cost of land and also cost towards pre-construction activities (like shifting of utilities etc.) shall not be included hereunder
- (iii) The Bidder shall quote experience in respect of a particular Eligible Project under any one category only, even though the Bidder (either individually or along with a member of the Joint Venture) may have played multiple roles in the cited project. Double counting for a particular Eligible Project shall not be permitted in any form.
- (iv) Experience for any activity relating to an Eligible Project shall not be claimed by two or more Members of the Joint Venture. In other words, no double counting by a Joint Venture in respect of the same experience shall be permitted in any manner whatsoever. 2.2.2.7

Submission in support of Technical Capacity

- (i) The Bidder should furnish the details of Eligible Experience for the last 5(five) financial years immediately preceding the Bid Due Date.
- (ii) The Bidder must provide the necessary information relating to Technical Capacity as per format at Annex-II of Appendix-IA.
- (iii) The Bidder should furnish the required Project-specific information and evidence in support of its claim of Technical Capacity, as per format at Annex-IV of Appendix-IA.

2.2.2.7 Submission in support of Financial capacity

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- (i) The Technical Bid must be accompanied by the Audited Annual Reports of the Bidder (of each Member in case of a Joint Venture) for the last 5 (five) financial years, preceding the year in which the bid is submitted.
- (ii) In case the annual accounts for the latest financial year are not audited and therefore the Bidder cannot make it available, the Bidder shall give an undertaking to this effect and the statutory auditor shall certify the same. In such a case, the Bidder shall provide the Audited Annual Reports for 5 (five) years preceding the year for which the Audited Annual Report is not being provided.
- (iii) The Bidder must establish the minimum Net Worth specified in Clause 2.2.2.3, and provide details as per format at Annex-III of Appendix-IA.

2.2.2.8 The Bidder shall enclose with its Technical Bid, to be submitted as per the format at Appendix-IA, complete with its Annexes, the following:

- (i) Certificate(s) from its statutory auditors[§] or the concerned client(s) stating the payments received or in case of a PPP project, the construction carried out by itself, during the past 7 years, in respect of the Eligible Projects. In case a particular job/ contract has been jointly executed by the Bidder (as part of a Joint Venture), it should further support its claim for the payments received or construction carried out by itself in PPP Projects as applicable the share in work done for that particular job/ contract by producing a certificate from its statutory auditor or the client; and
- (ii) Certificate(s) from its statutory auditors specifying the net worth of the Bidder, as at the close of the preceding financial year, and also specifying that the methodology adopted for calculating such net worth conforms to the provisions of this Clause 2.2.2.9 . For the purposes of this RFP, net worth (the “**Net Worth**”) shall mean the aggregate value of the paid-up share capital and all reserves created out of the profits and securities premium account, after deducting the aggregate value of the accumulated losses, deferred expenditure and miscellaneous expenditure not written off, as per the audited balance sheet, but does not include reserves created out of revaluation of assets, write-back of depreciation and amalgamation.

[[§] In case duly certified audited annual financial statements containing explicitly the requisite details are provided, a separate certification by statutory auditors would not be necessary in respect of Clause 2.2.2.9 . In jurisdictions that do not have statutory auditors, the firm of auditors which audits the annual accounts of the Applicant may provide the certificates required under this RFP.]

2.2.2.9 If a prospective Bidder has been qualified by MORTH under RFAQ process and its eligibility limit has been assigned, it may submit only Appendix-IA (Letter comprising the Technical Bid), Annex -I (Details of bidder), Annex- V (Statement of

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Legal Capacity) and Annex-VI (Information related to Bid capacity under Clause 2.2.2.1) against the requirement of clause 2.11.1 of this RFP.

2.3 Proprietary data

All documents and other information supplied by the Authority or submitted by a Bidder to the Authority shall remain or become the property of the Authority. Bidders are to treat all information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their Bid. The Authority will not return any Bid or any information provided along therewith.

2.4 Cost of Bidding

The Bidders shall be responsible for all of the costs associated with the preparation of their BIDs and their participation in the Bidding Process. The Authority will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

2.5 Site visit and verification of information

2.5.1 Bidders are encouraged to submit their respective BIDs after visiting the Project site and ascertaining for themselves the site conditions, traffic, location, surroundings, climate, availability of power, water & other utilities for construction, access to site, handling and storage of materials, weather data, applicable laws and regulations, and any other matter considered relevant by them. Bidders are advised to visit the site and familiarize themselves with the Project with in the stipulated time of submission of the Bid. No extension of time is likely to be considered for submission of Bids.

2.5.2 It shall be deemed that by submitting a BID, the Bidder has:

- (a) Made a complete and careful examination of the Bidding Documents (i.e. NIT, RFP, Special terms and condition, Special condition of contract, technical specification, site information etc.).
- (b) received all relevant information requested from the Authority;
- (c) accepted the risk of inadequacy, error or mistake in the information provided in the Bidding Documents or furnished by or on behalf of the Authority relating to any of the matters referred to in Clause 2.5.1 above. No claim shall be admissible at any stage on this account.
- (d) satisfied itself about all matters, things and information including matters referred to in Clause 2.5.1 hereinabove necessary and required for submitting an informed BID, execution of the Project in accordance with the Bidding Documents and performance of all of its obligations thereunder;
- (e) acknowledged and agreed that inadequacy, lack of completeness or incorrectness of information provided in the Bidding Documents or ignorance of any of the matters referred to in Clause 2.5.1 hereinabove shall not be a basis for any claim for compensation, damages, extension of time for performance of its obligations, loss of profits etc. from the Authority, or a ground for termination of the Agreement by the Contractor;
- (f) acknowledged that it does not have a Conflict of Interest; and

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(g) agreed to be bound by the undertakings provided by it under and in terms hereof.

2.5.3 The Authority shall not be liable for any omission, mistake or error in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to RFP, including any error or mistake therein or in any information or data given by the Authority.

2.6 Verification and Disqualification

2.6.1 The Authority reserves the right to verify all statements, information and documents submitted by the Bidder in response to the RFP and the Bidder shall, when so required by the Authority, make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification, by the Authority shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of the Authority thereunder.

2.6.2 The Authority reserves the right to reject any BID if:

(a) At any time, a material misrepresentation is made or uncovered, or

(b) The Bidder does not provide, within the time specified by the Authority, the supplemental information sought by the Authority for evaluation of the BID. Such misrepresentation/ improper response shall lead to the disqualification of the Bidder. If the Bidder is a Joint Venture, then the entire Joint Venture and each Member of the Joint Venture may be disqualified/ rejected. If such disqualification/rejection occurs after the BIDs have been opened and the lowest Bidder gets disqualified / rejected, then the Authority reserves the right to annul the Bidding Process and invites fresh BIDs.

2.6.3 In case it is found during the evaluation or at any time before signing of the Agreement or after its execution and during the period of defect liability, subsistence thereof, that one or more of the eligibility and /or qualification requirements have not been met by the Bidder, or the Bidder has made material misrepresentation or has given any materially incorrect or false information, the Bidder shall be disqualified forthwith if not yet appointed as the contractor either by issue of the LOA or entering into of the Agreement, and if the Selected Bidder has already been issued the LOA or has entered into the Agreement, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this RFP, be liable to be terminated, by a communication in writing by the Authority to the Selected Bidder or the Contractor, as the case may be, without the Authority being liable in any manner whatsoever to the Selected Bidder or the Contractor. In such an event, the Authority shall be entitled to forfeit and appropriate the Earnest money as the case may be, as Damages, without prejudice to any other right or remedy that may be available to the Authority under the Bidding Documents and / or the Agreement, or otherwise.

2.6.4. A Bidder shall be liable for disqualification and forfeiture of BID Security, if any legal, financial or technical adviser of the Authority in relation to the Project is engaged by the Bidder, its Member or any Associate thereof, as the case may be, in any manner for matters related to or incidental to such Project during the Bidding Process or subsequent to the (i) issue of the LOA or (ii) execution of the Agreement. In the event any such adviser is engaged by the selected Bidder or Contractor, as the case may be, after issue of the LOA or execution of the Agreement for matters related or incidental to the project, then notwithstanding anything to the contrary contained

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herein or in the LOA or the Agreement and without Prejudice to any other right or remedy or the Authority, including the forfeiture and appropriation of the BID Security or Performance Security. as the case may be, which the Authority may have there under or otherwise, the LOA or the Agreement, as the case may be, shall be liable to be terminated without the Authority being liable in any manner whatsoever to the Selected Bidder or Contractor for the same. For the avoidance or doubt, this disqualification shall not apply where such adviser was engaged by the Bidder, its Member or Associate in the past but its assignment expired or was terminated 6 (six) months prior to the date of issue of this RFP Nor will this disqualification apply where such adviser is engaged after a period of 3(three) years from date of commercial operation of the project.

B. DOCUMENTS

2.7 Contents of the RFP

2.7.1 This RFP comprises the Disclaimer set forth hereinabove, the contents as listed below, and will additionally include any Addenda issued in accordance with Clause 2.9.

Part –I

Invitation for BIDs

- Section 1. Introduction
- Section 2. Instructions to Bidders
- Section 3. Evaluation of BIDs
- Section 4. Fraud and Corrupt Practices
- Section 5. Pre-BID Conference
- Section 6. Miscellaneous.

Appendices

- IA. Letter comprising the Technical BID including Annexure I to VIII
- IB. Letter comprising the Financial BID
- IC. Declaration
- II. Power of Attorney for signing of BID
- III. Power of Attorney for Lead Member of Joint Venture
- IV. Joint Bidding Agreement for Joint Venture
- V. Integrity pact format
- VI. From of Bank Guarantee
- VII. From of LOA
- VIII. From of Bank Guarantee of Advance payment
- IX- Completion Certificate

Part –II

- General Condition of Contract (Printed from No.1 of KMDA),
- Special Condition of Contract,
- Special Terms and condition,
- Technical Specification,
- Information about site etc.

2.8 Clarifications

2.8.1 Bidders requiring any clarification on the RFP may notify the Authority in writing by e-mail in accordance with Clause 1.2.9. They should send in their queries on or

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before the date mentioned in the schedule of Bidding Process specified in Clause 1.3. The Authority shall endeavor to respond to the queries within the period specified therein, but no later than 15 (fifteen) days prior to the BID Due Date. The responses will be sent by e-mail. The Authority will forward all the queries and its responses thereto, to all Bidders without identifying the source of queries.

2.8.2 The Authority shall endeavour to respond to the questions raised or clarifications sought by the Bidders. However, the Authority reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this Clause shall be taken or read as compelling or requiring the Authority to respond to any question or to provide any clarification.

2.8.3 The Authority may also on its own motion, if deemed necessary, issue interpretations & clarifications to all Bidders. All clarifications & interpretations issued by the Authority shall be deemed to be part of the Bidding Documents. Verbal clarifications and information given by Authority or its employees or representatives shall not in any way or manner be binding on the Authority.

2.9 Amendment of RFP

2.9.1 At any point of time prior to the BID Due Date, the Authority may, for any reason, whether at its own initiative or in response to clarifications requested by a Bidder, modify the RFP by the issuance of Addenda.

2.9.2 Any Addendum issued hereunder will be hosted on the (KMDA's e-Tendering Portal <https://www.kmda.wb.gov.in>)

2.9.3 In order to afford the Bidders a reasonable time for taking an Addendum into account, or for any other reason, the Authority may, in its sole discretion, extend the BID Due Date .

[While extending the BID Due Date on account of an addendum, the Authority shall have due regard for the time required by Bidders to address the amendments specified therein. In the case of significant amendments, at least 15 (fifteen) days shall be provided between the date of amendment and the BID Due Date, and in the case of minor amendments, at least 7 (seven) days shall be provided.]

2.9.4 The contractors are to be taken as a whole. The several documents for kind of contract are to be taken as mutually explanatory of one another. If, however, the stipulation of the different documents be at variance in any respect, one will override the others (only in so far as these are at variance) in order of precedence as given below:

- (a) Letter of Intent(L.O.I)/Letter of Acceptance (LOA)
- (b) Notice Inviting Tender(NIT)
- (c) Request for proposal.(RFP)
- (d) Addendum/ Corrigendum to the Bid.
- (e) Minutes of the Pre-bid conference and addendum issued subsequently
Special terms and condition
- (f) General terms of Contract (The printed Tender from)(KMDA from No.I).
- (g) Special Condition of contract(SCC)
- (h) Special terms and condition
- (i) Technical specification.

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2.9.5 EXECUTION OF CIVIL, ELECTRICAL/MECHANICAL WORKS AND PAYMENT.

The tender accepting authority is the Superintending Engineer, Circle-I, R&B Sector, KMDA.

All Civil works will be executed under the supervision of Executive Engineer, Special Construction Division-III and North Division, R&B Sector, KMDA. Executive Engineer, Special Construction Division -III will act as nodal Engineer and also Engineer-In-Charge (EIC). All works will be executed under supervision of the concerned Executive Engineers and measurements / certification of the respective zone of works regarding “Construction of 4 Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (Near New Town) with Connectivity to Salt Lake Sector-V” through Engineering, procurement and construction (EPC) Mode Trunkey contract Basis” will be recorded and governed by the concerned division office of the R&B sector, KMDA. In addition to the above, as the Executive Engineer, Special Construction Division-III, R&B sector, KMDA will act as nodal officer for the above cited work, he will deal with the matter concerning the upkeep of the abstract measurements of the work for all R/A bills as well as final bills, extension of time (if necessary) for all the works including overseeing the process of payment of the bills etc. as per rules in force from time to time.

All Electrical / Mechanical works will be executed under the supervision of Executive Engineer, Electrical Division-II, E& M Sector, KMDA.

All Design & drawings related to civil works will have to be approved by the Superintending Engineer, Circle-I, R&B Sector, KMDA. The measurement of civil works will be recorded by concerned division offices of R&B Sector, KMDA.

All correspondences, design & drawing related to Electro-Mechanical works including factory visit of Generator, pump & motors will be approved by the concerned Superintending Engineer, Electrical circle-I, E&M Sector, KMDA and Executive Engineer, Electrical Division-II, E & M Sector, KMDA. The measurement of Electro-Mechanical works will be recorded by concerned division office of E&M Sector, KMDA.

All Design & drawings related to Electrical works will have to be approved by the Superintending Engineer, Electrical circle-I, E&M Sector, KMDA.

However, the financial abstract of all R/A bills as well as final bill will be prepared and submitted by the R&B Sector, KMDA.

2.9.6 LIST OF SUPPLIERS FOR SPECIFIED MATERIALS:-

- | | |
|-----------------------|---|
| 1. Cement (OPC): | ACC/Gujarat Ambuja/Lafarge/Ultratech or any equivalent brand as approved by Engineer in Charge.(EIC). |
| 2. Reinforcement Bars | Integrated steel producers viz. SAIL, RINL,TISCO or JINDAL(JSWL) or any equivalent brand as approved by Engineer in Charge.(EIC). |

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3. Expansion Joints	Empanelled Suppliers as per Ministry of Transport & Highways letter no.RW/NH-34059/1/96 S&R(B) dated 20 th Feb 2001 or any amended same as approved by EIC.
4. Admixtures	FOSROC, MBT, Asian Lab, MC Bauchemie, Pidilite or equivalent as approved by EIC.
5. Waterproofing System	CICO, FOSROC, MBT, SIKA, Krypton Build mat Co. Pvt. Ltd, Etc. or equivalent as approved by EIC.
6. Anchor Fastener	HILTI, BOSCH, Tyro lite, FOSROC or equivalent approved by EIC.
7. Structural Steel	TATA, SAIL, JSWL, RINL or equivalent as approved by EIC.
8. Pre-stressing Strand	TATA SSL Ltd. Usha Martin, Sumitomo Wire Corporation or equivalent as approved by EIC.
9. Pot/ Elastomeric Bearings	a) Prequalified Manufactures as per Ministry of Road Transport & Highways letter no.RW/NH-34057/1/95-S&R dated 2 Nov 2002 & any amendments to the same or equivalent as approved by EIC. b) RDSO, Lucknow Prequalified/ approved Manufacturers.
10. Horizontal Tie bars/ Shear Key System & Hold-down devices	BB Bars System. ETIC System, Macalloy System or equivalent as approved by EIC.
11. HDPE Sheathing	Rex Polyextrusion or equivalent as approved by EIC
12. Formwork Release Agent	FOSROC, MBT, MC Baucheme, ADO Additives Mfg or equivalent as approved by EIC.
13. Pre-stressing System	Freyssinet, BBR, VSL, Dynamic, Killick Nixon, Tensacciai (Italy), Macalloy, Dywidag, Usha martain or equivalent as approved by EIC.
14. Reinforcement Couplers	Usha Ismal, Dextra, BBR, Moment or equivalent as approved by EIC.
15. Form work suppliers	Pranav, L & T, Maruthi Fab

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	(Pune)Dywidag (Grips India).Giri Engineering, Yelahanka, Bangalore or equivalent as approved by EIC
16. Micro silica	Elkem, Fosroc, BASE, 20 Microns India Ltd. ADO Additives or equivalent as approved by EIC.
17. Non Shrink Compound	Fosroc, Roff. Sika or equivalent as approved by EIC
18. Testing labs	Quality control division, R&B Sector, KMDA, Civil Aid, National test House and Sriram Institute for Industrial reaches, laboratories of IIT, Jadavpur university /BESU/or NABL accredited lab s approved by EIC.
19. Pile testing	Civil Aid, Geo-Dynamic, Struct Geotech Reachers Laboratories Pvt. Ltd. Or equivqlent as approved by EIC.
20. Curing Compound	Fosroc, Sika, MBT, ADO Additives Mfg or equivalent as approved by EIC.
21 Paint	Asian Paints, ICI, Berger or equivalent approved by EIC.

NOTE: The materials supplied from the above list for consumption in the works shall be placed at the site with appropriate & requisite challan clearly indicating batch No. & identification code (as appeared on the product) supplied & also shall conform to the departmentally. Approved/accepted test certificate as per relevant standard to the produced from recognized institution like IIT. IEST etc and or NABL accredited test houses including National Test house.

2.9.7 The intending bidder or the lead partner (in case of JV) mush have an Register office/Branch office is in Kolkata Metropolitan area.

C. PREPARATION AND SUBMISSION OF BIDS

2.10 Format and Signing of BID

2.10.1 The Bidder shall provide all the information sought under this RFP. The Authority will evaluate only those BIDs that are received online in the required formats and complete in all respects and Bid Security/Earnest money.

2.10.2 The BID shall be typed and signed in indelible blue ink by the authorised signatory of the Bidder. All the alterations, omissions, additions or any other amendments made to the BID shall be initialed by the person(s) signing the BID.

2.11 Documents comprising Technical and Financial BID

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2.11.1 The Bidder shall submit the Technical BID & Financial Bid online through e-procurement portal [(<https://wbtenders.gov.in/> or <https://www.kmda.wb.gov.in>) comprising of the following documents along with supporting documents as appropriate:

Technical Bid

(a) Appendix-IA (Letter comprising the Technical Bid) including Annexure I to VIII and supporting certificates / documents. However, those bidders, whose RFAQ eligibility limit assessed by Ministry is not less than the estimated cost of the Project, are not required to submit Annexure II to IV of Appendix-IA;

(b) Power of Attorney for signing the BID as per the format at Appendix-II;

(c) if applicable, Power of Attorney for Lead Member of Joint Venture as per the format at Appendix-III;

(d) if applicable, Joint Bidding Agreement for Joint Venture as per the format at Appendix-IV;

(e) Earnest Money of Rs. 13.59 Cr(Rupees thirteen point five nine crores)

(f) Bidder shall comply with the provisions and its subsequent amendments if any, issued by regarding Integrity Pact (IP) and the Integrity Pact (IP) duly signed by Authorised signatory shall be submitted by the Bidder with the RFP Bid & shall be part of the Contract Agreement;

(g) An undertaking from the person having PoA referred to in Sub. Clause-(b) above that they agree and abide by the Bid documents uploaded by the authority and amendments uploaded, if any;

(h) Annexure-VIII of the appendix –IA showing details of all ongoing project works.

(i) copy of duly audited complete annual accounts of the bidders or each members (in case of Joint venture) for proceeding of last 5(five) years.

Financial Bid

(k) Appendix-IB (Letter comprising the Financial Bid).

2.11.2 The Bidder shall submit the bid through online of e-procurement portal [(<https://wbtenders.gov.in/> or <https://www.kmda.wb.gov.in>)

2.11.3 The designated office address and e-mail id are as follows for submitted the 'Queries /request for additional information:-

- i) The Superintending Engineer, Circle-I, R&B Sector, KMDA. 5th floor, Unnayan Bhavan, Bidhannagar, Kolkata-700091. **e-mail id: kmdarbc1@gmail.com**

2.11.4 BIDs submitted by fax, telex, telegram or e-mail shall not be entertained and shall be summarily rejected.

2.12 BID Due Date

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Technical & Financial BID comprising of the documents listed at clause 2.11.1 of the RFP shall be submitted online through e-procurement portal [(<https://wbtenders.gov.in/> or <https://www.kmda.wb.gov.in>) on or before hrs IST(server clock time) on.....

2.13 Late BIDs

E-procurement portal [(<https://wbtenders.gov.in/> or <https://www.kmda.wb.gov.in>)] shall not allow submission of any Bid after the prescribed date and time at clause 2.12.

2.14 Procedure for e-tendering

2.14.1 Accessing/ Purchasing of BID documents

2.14.1.1 It is mandatory for all the Bidders to have class-III Digital Signature Certificate (DSC)(in the name of Authorized Signatory / Firm or Organization / Owner of the Firm or organization) from any of the licensed Certifying Agency (Bidders can see the list of licensed CAs from the link www.cca.gov.in) to participate in e-tendering [(<https://wbtenders.gov.in/> or <https://www.kmda.wb.gov.in>). DSC should be in the name of the authorized signatory as authorized in Appendix III of this RFP. It should be in corporate capacity (that is in Bidder capacity / in case of JV in the Lead Member capacity, as applicable). The Bidder shall submit document in support of the DSC.

2.14.1.2 To participate in the bidding, it is mandatory for the Bidders to get registered their firm / Joint Venture with e-procurement portal of [(<https://wbtenders.gov.in/> or <https://www.kmda.wb.gov.in>)] to have user ID & password which has to be obtained by submitting an annual registration charges of INR *(Rupees *) (Inclusive of all taxes) to the e-tendering service provider through their e-payment gateway. Validity of online registration is 1 (one) year. Following may kindly be noted:

(a) Registration with e-procurement portal of KMDA should be valid at least up to the date of submission of BID.

(b) BIDs can be submitted only during the validity of registration.

2.14.1.3 If the firm / Joint Venture is already registered with e-tendering service provider of KMDA and validity of registration is not expired the firm / Joint Venture is not required a fresh registration.

2.14.1.4 The complete BID document can be viewed / downloaded by the Bidder from e-procurement portal of [(<https://wbtenders.gov.in/> or <https://www.kmda.wb.gov.in>)] or official portal of GoWB from ____** to ____** (up toHrs. IST).

2.14.2 Preparation & Submission of BIDs:

2.14.2.1 The Bidder may be submitted his Bid online following the instruction appearing on the screen. A buyer manual containing the detailed guidelines for e-procurement is also available on e-procurement portal [(<https://wbtenders.gov.in/> or <https://www.kmda.wb.gov.in>)].

2.14.2.2 The documents listed at clause 2.11.1 shall be prepared and scanned in different files (in PDF or JPEG format such that file size is not more than 5 MB) and uploaded during the on-line submission of BID.

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2.14.2.3 Bid must be submitted online only through e-procurement portal of [<https://wbtenders.gov.in/> or <https://www.kmda.wb.gov.in>] using the digital signature of authorised representative of the Bidder on or before (upto hours IST of server clock).

2.14.3 Modifications/ Substitution/ withdrawal of BIDs

2.14.3.1 The Bidder may modify, substitute or withdraw its e- BID after submission prior to the BID Due Date. No BID can be modified, substituted or withdrawn by the Bidder on or after the BID Due Date & Time.

2.14.3.2 For modification of e-BID, Bidder has to detach its old BID from e-procurement portal and upload / resubmit digitally signed modified BID. For withdrawal of BID, bidder has to click on withdrawal icon at e-procurement portal and can withdraw its e-BID. Before withdrawal of a BID, it may specifically be noted that after withdrawal of a BID for any reason, Bidder cannot re-submit e-BID again.

2.15 Online Opening of BIDs.

2.15.1 Opening of BIDs will be done through online process.

2.15.2 The KMDA shall on-line open Technical BIDs on 04/09/2024 at 14:00 hours IST, in the presence of the authorized representatives of the Bidders, who choose to attend. Technical BID of only those bidders shall be online opened whose documents listed at clause 2.11.1 of the RFP. The KMDA will subsequently examine and evaluate the BIDs in accordance with the provisions of Section 3 of RFP.

2.16 Rejection of BIDs

2.16.1 Notwithstanding anything contained in this RFP, the Authority reserves the right to reject any BID and to annul the Bidding Process and reject all BIDs at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons thereof. In the event that the Authority rejects or annuls all the BIDs, it may, in its discretion, invite all eligible Bidders to submit fresh BIDs hereunder.

2.16.2 The Authority reserves the right not to proceed with the Bidding Process at any time, without notice or liability, and to reject any BID without assigning any reasons.

2.17 Validity of BIDs

The BIDs shall be valid for a period of not less than 180 (one hundred and eighty) days from the BID Due Date. The validity of BIDs may be extended by mutual consent of the respective Bidders and the Authority.

2.18 Confidentiality

Information relating to the examination, clarification, evaluation and recommendation for the Bidders shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional advisor advising the Authority in relation to, or matters arising out of, or concerning the Bidding Process. The Authority will treat all information, submitted as part of the BID, in confidence and will require all those who have access to such material to treat the same in confidence. The Authority may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce

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or assert any right or privilege of the statutory entity and/ or the Authority or as may be required by law or in connection with any legal process.

2.19 Correspondence with the Bidder

Save and except as provided in this RFP, the Authority shall not entertain any correspondence with any Bidder in relation to acceptance or rejection of any BID. However, the Authority would display the result of technical evaluation on the web portal for 7 days including reasons for non- responsiveness, if any, and the financial bid will be opened thereafter.

D. EARNEST MONEY

The Bidder shall deposit an Earnest Money 13.59 crores in accordance with the provisions of this RFP. **Earnest Money deposit (EMD)** is to be remitted by the Tenderer in favour of **KMDA**. Payable at **KOLKATA**, as mentioned in the **NIT** through Net- Banking/ RTGS/NEFT in respect of the Tender ID as per requirement of e-Procurement System of Government of West Bengal (<https://wbtenders.gov.in/>).

Earnest Money to be submitted in the form of Bank Guarantee from a Nationalized Bank, acceptable to the authority as per format provided by KMDA and in such event the validity period of the bank guarantee shall not be less than 180 (One hundred and eighty) days from the bid due date inclusive of a claim period of 60 days and may be extended as may be mutually agreed between the authority and the bidder from time to time.

The BID shall be summarily rejected if it is not accompanied by the Earnest Money. (except State Govt Enterprises who are exempted as per rule. Ref: 430(3)-W(C)/1M-208/15 dt 31/08/2015 of Jt Sec, PWD) As per notification no. 38-W(C)/1M-208/15 dt. 17.01.2017 of P.W.D., Works Branch, Govt. of West Bengal, the three State Government Enterprises, viz. Mackintosh Burn Ltd., Westinghouse Saxby Farmer Ltd. and Britannia Engineering Ltd. are exempted from depositing of Earnest Money/ Bid Security for participating in the instant Bid subject to the condition that they will furnish security deposit(s) as applicable if selected as a successful bidder in the bid.

The BID shall be summarily rejected if it is not accompanied by the Earnest Money. The Earnest Money shall be refundable no later than 150 (one hundred and fifty) days from the BID Due Date except in the case of the Selected Bidder who's Earnest Money shall be retained till it has provided a Performance Security under the Agreement.

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**SECTION-3
EVALUATION OF TECHNICAL BIDS AND OPENING & EVALUATION OF
FINANCIAL BIDS**

3.1 Evaluation of Technical Bids

3.1.1 The Authority shall open the received BIDs online at**hours IST on**, and in the presence of the Bidders who choose to attend. Technical BID of only those bidders shall be online opened whose documents listed at clause 2.11.1 of the RFP have been received. The Authority shall prepare minutes of the BID opening, including information disclosed to those present at the time of BID opening.

3.1.2 Technical Bids of those Bidders who have not submitted their Bid online, shall not be considered for opening and evaluation.

3.1.3 If any information furnished by the Bidder is found to be incomplete, or contained in formats other than those specified herein, the Authority may, in its sole discretion, exclude the relevant information for consideration of eligibility and qualification of the Bidder.

3.1.4 To facilitate evaluation of Technical BIDs, the Authority may, at its sole discretion, seek clarifications in writing from any Bidder regarding its Technical BID. Such clarification(s) shall be provided within the time specified by the Authority for this purpose. Any request for clarification(s) and all clarification(s) in response thereto shall be in writing.

3.1.5 If a Bidder does not provide clarifications sought under Clause 3.1.4 above within the prescribed time, its Bid may be liable to be rejected. In case the Bid is not rejected, the Authority may proceed to evaluate the Bid by construing the particulars requiring clarification to the best of its understanding, and the Bidder **shall be barred from subsequently questioning such interpretation of the Authority.**

3.1.6 Tests of responsiveness

3.1.6.1 As a first step towards evaluation of Technical BIDs, the Authority shall determine whether each Technical BID is responsive to the requirements of this RFP. A Technical BID shall be considered responsive only if:

- (a) Technical BID is received online as per the format at Appendix-IA including Annex I to VIII .
- (b) Documents listed at clause 2.11.1 are received online.
- (c) Technical Bid is accompanied by the Power of Attorney as specified in Clauses 2.1.8;
- (d) Technical Bid is accompanied by Power of Attorney for Lead Member of Joint Venture and the Joint Bidding Agreement as specified in Clause.
- (e) Technical Bid contains all the information (complete in all respects);
- (f) Technical Bid does not contain any condition or qualification.

3.1.6.2 The Authority reserves the right to reject any Technical BID which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by the Authority in respect of such BID.

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3.1.7 In the event that a Bidder claims credit for an Eligible Project, and such claim is determined by the Authority as incorrect or erroneous, the Authority may reject / correct such claim for the purpose of qualification requirements.

3.1.8 The Authority will get the BID security verified from the issuing authority and after due verification, the Authority will evaluate the Technical BIDs for their compliance to the eligibility and qualification requirements pursuant to clause 2.2.1 & 2.2.2 of this RFP.

3.1.9 After evaluation of Technical Bids, the Authority will publish a list of Technically responsive Bidders whose financial bids shall be opened. The Authority shall notify other bidders that they have not been technically responsive. The Authority will not entertain any query or clarification from Applicants who fail to qualify.

3.2 Opening and Evaluation of Financial Bids

The Authority shall inform the time of online opening of the Financial Bids to the technically responsive Bidders through e-procurement portal and e-mail. The technically responsive bidders including joint venture partner(s), if any, shall inform the authority through email in the prescribed format enclosed at Annexure VI of Appendix IA, for any change in their bid capacity, due to award/ declared to be the lowest bidder in any other project as on bid submission date. In case of no change, 'NIL' information shall be furnished. If any of the qualified bidders fails to furnish the above information due to whatsoever reasons on bid submission date, or fails to qualify in Bid Capacity in this changed scenario, his financial bid shall not be opened. The Authority shall open in the presence of the authorised representatives of the Bidders who may choose to attend. The Authority shall publicly announce the Bid Prices quoted by the technically responsive Bidder. Thereafter the Authority shall prepare a record of opening of Financial Bids.

3.3 Selection of Bidder

3.3.1 Subject to the provisions of Clause 2.16.1, the Bidder whose BID is adjudged as responsive in terms of Clause 3.1.6 and who quotes lowest price shall be declared as the selected Bidder (the —"**Selected Bidder**").

3.3.2 In the event that two or more Bidders quote the same BID Price (the "**Tie BIDs**"), the Authority shall identify the Selected Bidder by draw of lots, which shall be conducted, with prior notice, in the presence of the Tie Bidders who choose to attend.

3.3.3 In the event that the Lowest Bidder is not selected for any reason, the Authority shall annul the Bidding Process and invite fresh BIDs. In the event that the Authority rejects or annuls all the BIDs, it may, in its discretion, invite all eligible Bidders to submit fresh BIDs hereunder. KMDA is not bound to select the lowest bidder if appropriate reasons are available.

3.3.4 After selection, a Letter of Award (the — "**LOA**") shall be issued, in duplicate, by the Authority to the Selected Bidder and the Selected Bidder shall, within 7(seven) days of the receipt of the LOA, sign and return the duplicate copy of the LOA in acknowledgement thereof. In the event the duplicate copy of the LOA duly signed by the Selected Bidder is not received by the stipulated date, the Authority may, unless it consents to extension of time for submission thereof, appropriate the BID Security of such Bidder as Damages on account of failure of the Selected Bidder to acknowledge the LOA.

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3.3.5 After acknowledgement of the LOA as aforesaid by the Selected Bidder, it shall cause the Bidder to execute the Agreement within the period prescribed in Clause 1.3. The Selected Bidder shall not be entitled to seek any deviation, modification or amendment in the Agreement.

3.4 Contacts during BID Evaluation

BIDs shall be deemed to be under consideration immediately after they are opened and until such time the Authority makes official intimation of award/ rejection to the Bidders. While the BIDs are under consideration, Bidders and/ or their representatives or other interested parties are advised to refrain, save and except as required under the Bidding Documents, from contacting by any means, the Authority and/ or their employees/ representatives on matters related to the BIDs under consideration.

3.5 Correspondence with Bidder

Save and except as provided in this RFP, the Authority shall not entertain any correspondence with any Bidder in relation to the acceptance or rejection of any Bid.

3.6 Any information contained in the Bid shall not in any way be construed as binding on the Authority, its agents, successors or assigns, but shall be binding against the Bidder if the Project is subsequently awarded to it on the basis of such information.

3.7 The Authority reserves the right not to proceed with the Bidding Process at any time without notice or liability and to reject any or all Bid(s) without assigning any reasons.

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SECTION-4

FRAUD AND CORRUPT PRACTICES

4.1 The Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process and subsequent to the issue of the LOA and during the subsistence of the Agreement. Notwithstanding anything to the contrary contained herein, or in the LOA or the Agreement, the Authority may reject a BID, withdraw the LOA, or terminate the Agreement, as the case may be, without being liable in any manner whatsoever to the Bidder, if it determines that the Bidder, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process. In such an event, the Authority shall be entitled to forfeit and appropriate the BID Security or Performance Security, as the case may be, as Damages, without prejudice to any other right or remedy that may be available to the Authority under the Bidding Documents and/ or otherwise.

4.2 Without prejudice to the rights of the Authority under Clause 4.1 hereinabove and the rights and remedies which the Authority may have under the LOA or the Agreement, or otherwise if a Bidder or Contractor, as the case may be, is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, or after the issue of the LOA or the execution of the Agreement, such Bidder shall not be eligible to participate in any tender or RFP issued by the Authority during a period of 2 (two) years from the date such Bidder, or Contractor, as the case may be, is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practices, as the case may be.

4.3 For the purposes of this Section 4, the following terms shall have the meaning hereinafter respectively assigned to them:

- (a) **“corrupt practice”** means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly, with the Bidding Process or the LOA or has dealt with matters concerning the Agreement or arising therefrom, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process); or

(i) save and except as permitted under the Clause 2.2.1(d) of this RFP, engaging in any manner whatsoever, whether during the Bidding Process or after the issue of the LOA or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Contract Agreement, who at any time has been or is a legal, financial or technical adviser of the Authority in relation to any matter concerning the Project.

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(b) **“Fraudulent practice”** means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process;

(c) **“coercive practice”** means impairing or harming, or threatening to impair or harm, directly or indirectly, any person or property to influence any person’s participation or action in the Bidding Process;

(d) **“undesirable practice”** means (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and

(e) **“restrictive practice”** means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Bidding Process.

SECTION-5

PRE-BID CONFERENCE

5.1 Pre-BID conference of the Bidders shall be convened at the designated date, time and place. A maximum of two representatives of prospective Bidders shall be allowed to participate on production of authority letter from the Bidder.

5.2 During the course of Pre-Bid conference(s), the Bidders will be free to seek clarifications and make suggestions for consideration of the Authority. The Authority shall endeavor to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Bidding Process.

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SECTION-6

MISCELLANEOUS

6.1 The Bidding Process shall be governed by, and construed in accordance with, the laws of India and the Courts at [Kolkata] shall have exclusive jurisdiction over all disputes arising under, pursuant to and/ or in connection with the Bidding Process.

6.2 The Authority, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to;

(a) Suspend and/ or cancel the Bidding Process and/ or amend and/ or supplement the Bidding Process or modify the dates or other terms and conditions relating thereto;

(b) Consult with any Bidder in order to receive clarification or further information;

(c) Retain any information and/ or evidence submitted to the Authority by, on behalf of, and/ or in relation to any Bidder; and/ or

(d) Independently verify, disqualify, reject and/ or accept any and all submissions or other information and/ or evidence submitted by or on behalf of any Bidder.

6.3 It shall be deemed that by submitting the Bid, the Bidder agrees and releases the Authority, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/ or performance of any obligations hereunder, pursuant hereto and/ or in connection with the Bidding Process and waives, to the fullest extent permitted by applicable laws, any and all rights and/ or claims it may have in this respect, whether actual or contingent, whether present or in future.

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APPENDIX I
CHECK LIST

QUESTIONNAIRE	REPLY OF THE TENDERER/ BIDDER (STRIKE OUT FIRMLY WHICH IS NOT APPLICABLE)
1. Whether the Tenderer has visited the site of works and got himself fully acquainted with the local conditions in and around the site of works.	Yes/No
2. Whether the Tenderer has carefully read all the stipulations in the Tender documents.	Yes/No
3. Whether the Tenderer has offered his rate with due consideration of all the stipulations in the tender documents including clause 28 & 29 of Special terms & conditions	Yes/No
4. Whether the Tenderer has signed at the bottom of all pages of the tender documents.	Yes/No
5. Whether the Tenderer has signed the form Declaration by the tenderer" as given (Annexure- IC), Special terms & conditions and furnished necessary information regarding his address and contact no.	Yes/No
6. Whether the Tenderer has offered his rate in page 2 of the : printed Tender Form -" of KMDA.	Yes/No
7. Whether the Tenderer has signed in the space allotted on page -3 of the printed Tender Form-I" of KMDA	Yes/No
8. Whether the signature of the Tenderer on page-3 of the printed _Tender Form-" has been properly witnessed in the space allotted for the purpose.	Yes/No
9. Whether the Tenderer has attached earnest money (Bid Security) in the form as mentioned in Clause 2.1.7 of Instructions to Bidders	Yes/No
10. Whether the Tenderer has attached all other documents as stated in Bid document.	Yes/No

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FORM-2

Construction of 4 Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (Near New Town) with Connectivity to Salt Lake Sector-V” through Engineering, procurement and construction (EPC) Mode Trunkey contract Basis.

FROM OF CONCRACKT AGREEMENT

This Agreement made on the _____ Day of _____ 20__ between the Roads and Bridges (R&B) Sector, Kolkata Metropolitan Development Authority, Unnayan Bhavan, Block A, 7th Floor, Salt Lake City, Kolkata-700091 (hereinafter called "the Employer") of the one part and M/s. _____ (herein after called “contractor”) of the other part.

Whereas the Employer is desirous that certain Works should be executed by the Contractor, viz. Construction of 4 lane Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisathan (Near New Town) with Connectivity to Salt Lake Sector-V” through Engineering, procurement and construction (EPC) Mode Trunkey contract Basis by Kolkata Metropolitan Development Authority (KMDA), with 5 Years of Operations and Maintenance, post construction completion, and has accepted the bid by the Contractor for the execution and completion of the entire works herein at a Contract Price of Rs.....(Rupees

Now this Agreement witness as follows:-

- (a) The Letter of Intent (LOI)/ Letter of Acceptance(LOA)
- (b) Notice Inviting Tender (NIT)
- (c) Request for Proposal(RFP)
- (d) Addendum/Corrigendum of the Bid.
- (e) Minutes of the Pre-bid Conference and Addendum issued subsequently Special Terms and Condition .
- (f) General Terms and Condition (Printed Tender Form-I of KMDA)
- (g) Special Condition of Contract (SCC)
- (h) Special Terms and Condition of Contract.
- (i) The Technical Specifications

3. In consideration of the payments to be made by the Employer to the Contractor as herein after mentioned, the Contractor hereby covenants with the Employer to execute and complete the execution of the Project in conformity in all respects with the provisions of the Contract Agreement.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the execution of the Project, the Contract Price or such

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other sum as may become payable under the provisions of the Contract Agreement at the times and in the manner prescribed by the Contract Agreement.

In witness whereof the parties hereto have caused this Agreement to be executed the day and year first before written.

Signed, sealed, and delivered by the said Employer and the Contractor in the presence of:

Witnesses:

On behalf of

On behalf of

Kolkata Metropolitan Development Authority

M/S-----

1.

1.

2.

2.

Biding signature of the Employer:

Biding signature of the Contractor:

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**APPENDIX IA
LETTER COMPRISING THE TECHNICAL BID**

**Superintending Engineer
Circle-I, R&B Sector, KMDA**

Sub: BID for “Construction of 4 Lane Elevated Corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (near New Town) with connectivity to Salt Lake, Sector V” through Engineering, procurement and construction (EPC) Mode Trunkey contract Basis.

Sir,

With reference to your RFP document dated 00.00.2024, I/we, having examined the Bidding Documents and understood their contents, hereby submits my/our BID for the aforesaid Project. The BID is unconditional and unqualified.

1. I/ We acknowledge that the Authority will be relying on the information provided in the BID and the documents accompanying the BID for selection of the Contractor for the aforesaid Project, and we certify that all information provided in the Bid and its the Annex I to VIII and Appendix I to IX along with the supporting documents are true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying the BID are true copies of their respective originals.

2. This statement is made for the express purpose of our selection as EPC mode turnkey Contractor for the development, Construction, Electrification, Instrumentation of the aforesaid Project and maintenance of the Project during the Defect Liability Period.

3. I/ We shall make available to the Authority any additional information it may find necessary or require to supplement or authenticate the BID.

4. I/ We acknowledge the right of the Authority to reject our BID without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.

5. I/ We certify that in the last two years, we/ any of the JV partners have neither failed to perform for the works of GoI or any of the State Government Authorities, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against us, nor been expelled or terminated by Ministry of Road Transport & Highways or its implementing agencies for breach on our part.

6. I/ We declare that:

- (a) I/ We have examined and have no reservations to the Bidding Documents, including any Addendum issued by the Authority; and
- (b) I/We do not have any conflict of interest in accordance with Clauses 2.2.1 and 2.2.1 (d) of the RFP document; and
- (c) I/We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in Clause 4.3 of the RFP document,

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in respect of any tender or request for proposal issued by or any Agreement entered into with the Authority or any other public sector enterprise or any government, Central or State; and

(d) I/ We hereby certify that we have taken steps to ensure that in conformity with the provisions of Section 4 of the RFP, no person acting for us or on our behalf has engaged or will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice; and

(e) the undertakings given by us along with the Application in response to the RFP for the Project and information mentioned for the evaluation of the BID Capacity in Annex- VI were true and correct as on the date of making the Application and are also true and correct as on the BID Due Date and I/we shall continue to abide by them.

7. I/ We understand that you may cancel the Bidding Process at any time and that you are neither bound to accept any BID that you may receive nor to invite the Bidders to BID for the Project, without incurring any liability to the Bidders, in accordance with Clause 2.16.2 of the RFP document.

8. I/We believe that we/our Joint Venture satisfy(s) the Threshold Technical Capacity, Net Worth criteria and meet(s) the requirements as specified in the RFP document.

9. I/ We declare that we/ any Member of the Joint Venture or our/Joint Venture member are not a Member of any other Joint Venture submitting a BID for the Project.

10. I/ We certify that in regard to matters other than security and integrity of the country, we/ any Member of the Joint Venture or any of our/their Joint venture member have not been convicted by a Court of Law or indicted or adverse orders passed by a regulatory authority which could cast a doubt on our ability to undertake the Project or which relates to a grave offence that outrages the moral sense of the community.

11. I/ We further certify that in regard to matters relating to security and integrity of the country, we/ any Member of the Joint Venture or any of our/their Joint venture members have not been charge-sheeted by any agency of the Government or convicted by a Court of Law.

12. I/ We further certify that no investigation by a regulatory authority is pending either against us/any member of Joint Venture or against our CEO or any of our directors/ managers/ employees.

13. I/ We further certify that we are not disqualified in terms of the additional criteria specified by the Department of Disinvestment in their OM No. 6/4/2001-DD-II dated 13.7.01, a copy of which forms part of the RFP at Annexure VII of Appendix-IA thereof.

14. I/ We undertake that in case due to any change in facts or circumstances during the Bidding Process, we are attracted by the provisions of disqualification in terms of the guidelines referred to above, we shall intimate the Authority of the same immediately.

15. I/We further acknowledge and agree that in the event such change in control occurs after signing of the Agreement up to its validity. It would, notwithstanding anything to the contrary contained in the Agreement, be deemed a breach thereof, and

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the Agreement shall be liable to be terminated without the Authority being liable to us in any manner whatsoever.

16. I/ We hereby irrevocably waive any right or remedy which we may have at any stage at law or howsoever otherwise arising to challenge or question any decision taken by the Authority in connection with the selection of the Bidder, or in connection with the Bidding Process itself, in respect of the above mentioned Project and the terms and implementation thereof.

17. In the event of my/ our being declared as the Selected Bidder, I/we agree to enter into an Agreement in accordance with the draft that has been provided to me/us prior to the BID Due Date. We agree not to seek any changes in the aforesaid draft and agree to abide by the same.

18. I/ We have studied all the Bidding Documents carefully and also surveyed the [project highway and the traffic]. We understand that except to the extent as expressly set forth in the Agreement, we shall have no claim, right or title arising out of any documents or information provided to us by the Authority or in respect of any matter arising out of or relating to the Bidding Process including the award of Agreement.

19. I/ We offer an Earnest Money of Rs.13.59 crores (Rupees thirteen point five nine crores only) to the Authority in accordance with the RFP Document.

20. The Earnest Money in the form of a Bank Guarantee is attached.

21. The documents accompanying the Technical BID, as specified in Clause 2.11.1 of the RFP, have been submitted in separate files.

22. I/ We agree and understand that the BID is subject to the provisions of the Bidding Documents. In no case, I/we shall have any claim or right of whatsoever nature if the Project / Contract is not awarded to me/us or our BID is not opened or rejected.

23. The BID Price has been quoted by me/us after taking into consideration all the terms and conditions stated in the RFP, draft Agreement, our own estimates of costs and after a careful assessment of the site and all own the conditions that may affect the project cost and implementation of the project. The BID Price quoted by us is inclusive of GST, CESS etc. and other statutory charges if any other as applicable.

24. I/ We agree and undertake to abide by all the terms and conditions of the RFP document.

25. We, the Joint Venture agree and undertake to be jointly and severally liable for all the obligations of the EPC Contractor under the Contract Agreement}.

26. I/ We shall keep this offer valid for 180 (one hundred and twenty) days from the BID Due Date specified in the RFP.

27. I/ We hereby submit our BID and offer a BID Price as indicated in Financial Bid for undertaking the aforesaid Project in accordance with the Bidding Documents and the Agreement.

In witness thereof, I/we submit this BID under and in accordance with the terms of the RFP document.

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SALT LAKE, KOLKATA – 700 091**

Yours faithfully,

Date:
designation Place:
Authorized signatory)

(Signature, name and
of the

Name & seal of

Bidder/Lead Member

[Note: Paragraphs in curly parenthesis may be omitted by the Bidder, if not applicable to it, and **“Deleted”** may be indicated there]

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APPENDIX – IB

Letter comprising the Financial BID

**The Superintending Engineer
Circle-1, R&B Sector, KMDA**

Sub: - BID for “Construction of 4 Lane Elevated Corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (near New Town) with connectivity to Salt Lake, Sector-V” through Engineering, procurement and construction (EPC) Mode Trunkey contract Basis.

Sir,

With reference to your RFP document dated 00.00.2024, I/we, having examined the Bidding Documents and understood their contents, hereby submits my/our BID for the aforesaid Project. The BID is unconditional and unqualified.

1. I/ We acknowledge that the Authority will be relying on the information provided in the BID and the documents accompanying the BID for selection of the Contractor for the aforesaid Project, and we certify that all information provided in the Bid are true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying the BID are true copies of their respective originals.

2. The BID Price has been quoted by me/us after taking into consideration all the terms and conditions stated in the RFP, draft Agreement, our own estimates of costs and after a careful assessment of the site and all own the conditions that may affect the project cost and implementation of the project. The BID Price quoted by us is inclusive of GST, CESS etc. and other statutory charges if any other as applicable.

3. I/ We acknowledge the right of the Authority to reject our BID without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.

4. In the event of my/ our being declared as the Selected Bidder, I/we agree to enter into an Agreement in accordance with the draft that has been provided to me/us prior to the BID Due Date. We agree not to seek any changes in the aforesaid draft and agree to abide by the same.

5. I/ We shall keep this offer valid for 180 (one hundred and eighty) days from the BID Due Date specified in the RFP.

Yours
faithfully,

Date: _____ (Signature, name and
designation of the Place: _____
authorized Signatory)

Name & seal of
Bidder/Lead
Member:..... DSC ID of
Authorised Signatory
:.....

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**APPENDIX -IC
DECLARATION BY THE TENDERER**

“e” Tender NIT. No.07/SE/C-I/R&B/KMDA/W-03(PART-I) of 2024-25;

Dt.- 23/07/2024

I/We have carefully gone through the Notice Inviting Tenders, RFP and other tender documents mentioned therein. I/We have also carefully gone through the **Bill of Quantities(BOQ), RFP, General Terms and Conditions KMDA Tender Form No-1), Special Condition of Contract, Special Terms and Condition, Technical Specifications, and all other documents, Corrigendum’s uploaded** before the last date of submission which will be part & parcel of the **Contract Document**. I/We shall be bound to **sign all hard copies** of uploaded documents under the NIT, during execution of formal agreement. My/our tender is offered taking due consideration of all factors, and if the same be accepted. I/We promise to abide by the stipulation of the, contracts Documents and carry out and complete the work up to the entire satisfaction of the Department.

Signature of the Tenderer

Name of the Tenderer

Postal Address:

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**ANNEX-I
Details of Bidder**

1. (a) Name:
(b) Country of incorporation:
(c) Address of the corporate headquarters and its branch office(s), if any, in India:
(d) Date of incorporation and/ or commencement of business:

2. Brief description of the Bidder including details of its main lines of business and proposed role and responsibilities in this Project:

3. Details of individual(s) who will serve as the point of contact/ communication for the Authority:
(a) Name:
(b) Designation:
(c) Company:
(d) Address:
(e) Telephone Number:
(f) E-Mail Address:
(g) Fax Number:

4. Particulars of the Authorized Signatory of the Bidder:
(a) Name:
(b) Designation:
(c) Address:
(d) Phone Number:
(e) Fax Number:
(f) Class III Digital Signature Certificate ID number

5. In case of a Joint Venture:
(a) The information above (1-4) should be provided for all the Members of the Joint Venture.
(b) A copy of the Jt. Bidding Agreement, as envisaged in Clause 2.1.15(g) should be attached to the Application.
(c) Information regarding the role of each Member should be provided as per table below:

Sl. No.	Name of Member	Role* {Refer Clause 2.1.15(d)} [§]	Share of work in the Project{Refer Clauses 2.1.15(a), (f) & (h)}
1			
2			
3			

* The role of each Member, as may be determined by the Applicant, should be indicated in accordance with instruction 4 at Annex-IV.

§ All provisions contained in curly parenthesis shall be suitably modified by the Applicant to reflect the particulars relating to such Applicant.

[§ All provisions contained in curly parenthesis shall be suitably modified by the Applicant to reflect the particulars relating to such Applicant.]

- (d) The following information shall also be provided w.r.t para 2.1.18 for each Member of the Joint Venture: **Name of Applicant/ member of Joint Venture:**

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Sl. No.	Criteria	Yes/No
1	Has the Bidder/ constituent of the Joint Venture been barred by the GoI or any of the State Governments and/or its implementing agencies for the works of Expressways, National Highways ,Flyover, bridge, RoB works etc. from participating in bidding	
2	If the answer to 1 is yes, does the bar subsist as on BID due date	

6. A statement by the Bidder and each of the Members of its Joint Venture (where applicable) disclosing material non-performance or contractual non-compliance in past projects, contractual disputes and litigation/ arbitration in the last 2 years is given below (Attach extra sheets, if necessary) w.r.t para 2.1.19:

Sl. No.		1 st Last Year	2 nd Last Year
1	If bidder have either failed to perform for works of Expressways, National Highways, Flyover Project bridge, RoB etc works, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Bidder or any of its Joint Venture Member, as the case may be, or has been expelled / terminated by GoI or any of the State Government and/or its implementing agencies for breach by such Bidder or any of its Joint Venture Member, along-with updated details of ongoing process of litigation / blacklisting		

6(a) I/ We certify that in the last two years, we/ any of the JV partners have neither failed to perform for the works of Expressways, National Highways, Flyover Project bridge, RoB etc works, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitral award against us, nor been expelled or terminated by GoI or any of the State Government and/or its implementing agencies for breach on our part.

6(b) I/ We certify that we/ any of the JV partners do not fall in any of the categories of being a Non-Performing entity given at Clause 2.1.22 of Instructions to Bidders in the projects of Expressways, National Highways, Flyover Project, bridge, RoB etc. works of GOI, any state Govt. or its implementing agencies and furnished the complete details.

7(a) I/ We further certify that no investigation by a regulatory authority is pending either against us/any member of Joint Venture or our sister concern or against our CEO or any of our directors/managers/employees.

- (a) I/ We further certify that no investigation by any investigating agency in India or outside is pending either against us/ any member of Joint Venture or our sister concern or against our CEO or any of our directors/managers/employees.

A statement by the Bidder and each of the Members of its Joint Venture (where applicable) disclosing material non-performance or contractual non-compliance in current projects, as on bid due date is given below (attach extra sheets, if necessary) w.r.t. para 2.1.22.

Name of the Bidder /Member of JV: _____

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Sr. No.	Categories of Non-Performer	Project 1	Project 2
I	Fails to complete or has missed more than two milestones in already awarded two or more projects, even after lapse of 6 months from the scheduled completion date, unless Extension of Time has been allowed on the recommendations of the Independent Engineer due to Authority's default;		
II	Fails to complete a project, as per revised schedule, for which One Time Fund Infusion (OTFI) has been sanctioned by the Authority;		
III	Physical progress on any project is not commensurate with the funds released (equity+ debt+ grant) from the escrow account and such variation is more than 25% in last one year as observed by the Independent Engineer in one or more projects;		
IV	Punch List Items in respect of any project are pending due to Bidder's default in two or more Projects even after lapse of the prescribed time for completion of such items;		
V	Fails to fulfil its obligations to maintain a highway in a satisfactory condition in spite of two rectification notices issued in this behalf;		
VI	Fails to attend to Non Conformity Reports (NCRs) issued by the Independent/ Authority's Engineer on the designs/ works constructed by the Bidder pending for more than one year in two or more projects.		
VII	Fails to make premium payments excluding the current installment in one or more projects.		
VIII	Damages/Penalties recommended by the Independent/ Authority's Engineer on the Bidder during O&M period and the remedial works are not taken up in two or more projects.		
IX	Fails to achieve financial closure in two or more projects within the given or extended period (which shall not be more than six months in any case).		
X	Fails to submit the Performance Security within the permissible period in more than one project(s).		
XI	Rated as an unsatisfactory performing entity/ nonperforming entity by an independent third party agency and so notified on the website of the Authority.		

I/ We certify that the list is complete and covers all the projects of Expressways, National Highways, Flyover Project, bridge, RoB etc works of GoI or any of the State Government and/or its implementing agencies and that we/ any of the JV partners do not fall in any of the above categories of being a Non-Performing entity.

(Signature, name and designation of the authorized signatory)

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For and on behalf of.....

ANNEX-II

Technical Capacity of the Bidder[@]

(Refer to Clauses 2.2.2.2, 2.2.2.5 and 2.2.2.6 of the RFP)

Applicant type	Project Code*	Category #	Experience** (Equivalent Rs. crore)**		Technical Experience ^e
			Payments received for construction of Eligible Projects in Categories 3 & 4	Value of self-construction in Eligible Projects in Categories 1 and 2	
(1)	(2)	9#)	(4)	(5)	(6)
Single entity Bidder or Lead Member including other members of the Joint Venture a b c d e f Aggregate Technical Experience	a				
	B				
	C				
	D				
	E				
	F				
Aggregate Technical Experience =					

Provide details of only those projects that have been undertaken by the Applicant, or its Lead member including members in case of joint venture, under its own name separately and/ or by a project company eligible under Clause 2.2.2.6(i)(b). In case of Categories 1 and 2, include only those projects which have an estimated capital cost exceeding the amount specified in Clause 2.2.2.6(i)(c) and for Categories 3 and 4, include only those projects where the payments received exceed the amount specified in Clause 2.2.2.6(ii). In case the Bid Due Date falls within 3 (three) months of the close of the latest financial year, refer to Clause 2.1.20.

* Refer Annex-IV of this Appendix-I. Add more rows if necessary.

§ Refer Clause 2.2.2.5(i) ** Construction shall not include supply of goods or equipment except when such goods or equipment form part of a turn-key construction contract/ EPC contract for the project. In no case shall the cost of maintenance and repair, operation of Highways and land be included while computing the Experience Score of an Eligible Project.

❖ The conversion rate of USD into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India for the relevant date. Where relevant date should be as on the date 28 (twenty eight) days prior to the Application Due Date.

NOTE: In case of a Joint Venture, information in Annex-II and Annex-IV of Appendix-I shall be provided separately for other Members so as to establish that each such Member has 20 percent or more of the Threshold Technical Capacity. (Refer Clause 2.2.2.4).

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ANNEX-III

Financial Capacity of the Bidder

(Refer to Clauses 2.2.2.3, 2.2.2.9, 2.2.2.8 of the RFP)

(In Rs. crore\$)

Bidder type	Net Cash Accruals					Net Worth [‡]
	Year 1	Year 2	Year 3	Year 4	Year 5	
Single entity Bidder or Lead Member including other members of the Joint Venture						
TOTAL						

Bidder type	Annual Turnover										Average Annual Turnover (In Rs. crore\$)
	Year 1		Year 2		Year 3		Year 4		Year 5		
	(Rs.)	Updation factor	(Rs.)	Updation factor	(Rs.)	Updation factor	(Rs.)	Updation factor	(Rs.)	Updation factor	
1	2	3	4	5	6	7	8	9	10	11	$(2 \times 3 + 4 \times 5 + 6 \times 7 + 8 \times 9 + 10 \times 11) / 5$
Single entity Bidder or Lead Member including other members of the Joint Venture		1.00		1.05		1.10		1.15		1.20	

Name & address of Bidder's Bankers:

* For conversion of other currencies into rupees, see note below Annex-II of Appendix-I.

‡ The Bidder should provide details of its own Financial Capacity.

Instructions:

1. The Bidder shall attach copies of the balance sheets, financial statements and Annual Reports for 5 (five) years preceding the Bid Due Date. The financial statements shall:

- (a) reflect the financial situation of the Bidder;
- (b) be audited by a statutory auditor;

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(c) be complete, including all notes to the financial statements; and
(d) correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

2. Net Cash Accruals shall mean Profit After Tax + Depreciation.

3. Net Worth (the “**Net worth**”) shall means the aggregate value of the paid-up share capital and all reserves created out of the profits and securities premium account, after deducting the aggregate value of the accumulated losses, deferred expenditure and miscellaneous expenditure not written off, as per the audited balance sheet, but does not include reserves created out of revaluation of assets, write-back of depreciation and amalgamation.

4. Year 1 will be the latest completed financial year, preceding the bidding. Year 2 shall be the year immediately preceding Year 1 and so on. In case the Bid Due Date falls within 3 (three) months of the close of the latest financial year, refer to Clause 2.1.20.

5. In the case of a Joint Venture, a copy of the Jt. Bidding Agreement shall be submitted in accordance with Clause 2.1.18 (g) of the RFP document.

6. The Bidder shall also provide the name and address of the Bankers to the Bidder.

7. The Bidder shall provide an Auditor’s Certificate specifying the net worth of the Bidder and also specifying the methodology adopted for calculating such net worth in accordance with Clause 2.2.2.8 (ii) of the RFP document.

ANNEX-IV
Details of Eligible Projects

(Refer to Clauses 2.2.2.2, 2.2.2.5 and 2.2.2.7 of the RFP)

Project Code:	Entity: Self/Members:	
Item	Refer Instruction	Particulars of the Project
Title & nature of the project		
Category	5	
Year-wise	6	
(a) payments received for construction or work executed and certified by the Engineer-in-charge/Independent Engineer /Authority’s Engineer, and/or (b) revenues appropriated for self-construction under PPP projects		
Entity for which the project was constructed	7	
Location		
Project Cost	8	
Date of commencement of project/ contract		
Date of completion/	9	

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SALT LAKE, KOLKATA – 700 091**

commissioning		
Equity shareholding (with period during which equity was held)	10	

Instructions:

1. Bidders are expected to provide information in respect of each Eligible Projects in this Annex. The projects cited must comply with the eligibility criteria specified in Clause 2.2.2.6 (i) and 2.2.2.6 (ii) of the RFP, as the case may be. Information provided in this section is intended to serve as a back-up for information provided in the Application. Applicants should also refer to the Instructions below.
2. The Project Codes would be a, b, c, d etc.
3. A separate sheet should be filled for each Eligible Project.
4. In case the Eligible Project relates to other Members, write “Member”.
5. Refer to Clause 2.2.2.5 of the RFP for category number.
6. The total payments received and/or revenues appropriated for self-construction for each Eligible Project are to be stated in Annex-II of this Appendix-I. The figures to be provided here should indicate the break-up for the past 5 (five) financial years. Year 1 refers to the financial year immediately preceding the Bid Due Date; Year 2 refers to the year before Year 1, Year 3 refers to the year before Year 2, and so on. For Categories 1 and 2, expenditure on construction of the project by the Applicant itself should be provided, but only in respect of projects having an estimated capital cost exceeding the amount specified in Clause 2.2.2.6(i)(c). In case of Categories 3 and 4, payments received only in respect of construction should be provided, but only if the amount received exceeds the minimum specified in Clause 2.2.2.6(ii). Receipts for construction works should only include capital expenditure, and should not include expenditure on maintenance & repair and operation of Highways.
7. In case of projects in Categories 1 and 2, particulars such as name, address and contact details of owner/ Authority/ Agency (i.e. concession grantor, counter party to concession, etc.) may be provided. In case of projects in Categories 3 and 4, similar particulars of the client need to be provided.
8. Provide the estimated capital cost of Eligible Project. Refer to Clauses 2.2.2.6(i) and 2.2.2.6(ii)
9. For Categories 1 and 2, the date of commissioning of the project, upon completion, should be indicated. In case of Categories 3 and 4, date of completion of construction should be indicated. In the case of projects under construction, the likely date of completion or commissioning, as the case may be, shall be indicated.
10. For Categories 1 and 2, the equity shareholding of the Bidder, in the company owning the Eligible Project, held continuously during the period for which Eligible Experience is claimed, needs to be given (Refer Clause 2.2.2.6(i)).
11. Experience for any activity relating to an Eligible Project shall not be claimed twice. In other words, no double counting in respect of the same experience shall be permitted in any manner whatsoever.

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SALT LAKE, KOLKATA – 700 091**

12. Certificate from the Bidder's statutory auditor\$ or its respective clients must be furnished as per formats below for each Eligible Project. In jurisdictions that do not have statutory auditors, the auditors who audit the annual accounts of the Bidder may provide the requisite certification.

13. If the Bidder is claiming experience under Categories 1 & 2 , it should provide a certificate from its statutory auditor in the format below as per Clause 2.2.2.6 (i) (d) :

Certificate from the Statutory Auditor regarding PPP projects^φ

Based on its books of accounts and other published information authenticated by it, this is to certify that (name of the Bidder) is/ was an equity shareholder in (title of the project company) and holds/held Rs. cr. (Rupees crore) of equity (which constitutes%€ of the total paid up and subscribed equity capital) of the project company from (date) to (date)¥The project was/is commenced on(date) and likely to be commissioned on (date of commissioning of the project).

We further certify that the total estimated capital cost of the project is Rs. cr. (Rupeescrore), of which the applicant has itself undertaken the construction of project of Rs.(Rupees Crores) excluding any part of the project for which any contractor, sub-contractor or other agent was appointed for the purpose of construction by the aforesaid Applicant itself, during the past five financial years as per year-wise details noted below:

Name of the audit firm:
Seal of the audit firm:
Date:

(Signature, name and designation
of the authorised signatory)

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/\$ In case duly certified audited annual financial statements containing the requisite details are provided, a separate certification by statutory auditors would not be necessary.

/\$ Refer Clause 2.2.2.5 of the RFP.

φ Provide Certificate as per this format only. Attach Explanatory Notes to the Certificate, if necessary. Statutory auditor means the entity that audits and certifies the annual accounts of the company.

€ Refer instruction no. 10 in this Annex-IV.

¥ In case the project is owned by the Applicant company, this language may be suitably modified to read: "It is certified that (name of Applicant) constructed and/ or owned the (name of project) from (date) to (date)."

** Refer Clauses 2.2.2.5 and 2.2.2.6(ii) of the RFP]*

14. If the Bidder is claiming experience under Category 3 & 4♣, as per Clauses 2.2.2.5 and 2.2.2.6(ii) of the RFP, it should provide a certificate from its Statutory Auditor/client/ Engineer-in charge/ Independent Engineer/Authority's Engineer in the format below:

Certificate regarding construction works^φ

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Based on its books of accounts and other published information authenticated by it, This is to certify that(name of the Bidder) was engaged by(title of the project company) to execute (name of project) for (nature of project). The construction of the project commenced on(date) and the project was/ is likely to be commissioned on (date, if any). It is certified that Bidder received payments from its Clients for Construction Works executed by them or work executed and certified by the Engineer-in-charge/Independent Engineer/Authority's Engineer, in the aforesaid construction works. We further certify that the total estimated capital cost of the project is Rs. cr. (Rupeescrore), of which the Applicant received or has executed the work as certified by the Engineer-in-charge/Independent Engineer/Authority's Engineer Rs. cr. (Rupees crore), during the past five financial years as per year-wise details noted below:

It is further certified that the receipts indicated above are restricted to the share of the Applicant who undertook these works as a partner or a member of joint venture.

♠ We further certify that applicant has a share of ____% in the Joint Venture/Consortium.

(Authorized Signatory)

Date:

15. It may be noted that in the absence of any detail in the above certificates, the information would be considered inadequate and could lead to exclusion of the relevant project in computation of Experience.

[Refer Clauses 2.2.2.5 and 2.2.2.6(ii) of the RFP.*

♢ Provide Certificate as per this format only. Attach Explanatory Notes to the Certificate, if necessary. Statutory auditor means the entity that audits and certifies the annual accounts of the company. However, in case the work of other member(s) is also executed by the applicant, then this fact should also be certified by the Statutory Auditor and accordingly the language may be suitably modified.

♣ This certification should be strike out in case of jobs/ contracts, which are executed a sole firm. The payments indicated in the certificate should be restricted to the share of Applicant in such partnership/ joint venture. This portion may be omitted if the contract did not involve a partnership/ joint venture. In case where work is not executed by partnership/ joint venture, this paragraph may be deleted.]

ANNEX-V

Statement of Legal Capacity

(To be forwarded on the letterhead of the Applicant/ Lead Member of Joint Venture)

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SALT LAKE, KOLKATA – 700 091

Ref. Date:

To,
Superintending Engineer,
C-I, R&B sector, KMDA

Dear Sir,

We hereby confirm that we/ our members in the Joint Venture (constitution of which has been described in the application) satisfy the terms and conditions laid out in the RFP document.

We have agreed that (Insert member's name) will act as the Lead Member of our Joint Venture.

* We have agreed that (Insert individual's name) will act as our representative/ will act as the representative of the Joint Venture on its behalf* and has been duly authorized to submit the RFP. Further, the authorized signatory is vested with requisite powers to furnish such letter and authenticate the same.

Thanking you,

Yours faithfully,

(Signature, name and designation of the authorized signatory)

For and on behalf of.....

*Please strike out whichever is not applicable.

ANNEX-VI
Bid Capacity

Information required to evaluate the BID Capacity under clause 2.2.2.1:

To calculate the value of "A" and "C"

1. A table containing value of Civil Engineering Works in respect of EPC Projects (Turnkey projects / Item rate contract/ Construction works) undertaken by the Bidder during the last 5 years is as follows(the amount of bonus received, if any, shall be indicated separately):

2.

Sl. No.	Year	Value of Civil Engg. Works undertaken w.r.t. EPC Projects including bonus, if any (Rs. in Crores)	Amount of bonus (Rs. in Crores)	Net Value excluding bonus (Rs. in Crores)
1	2023-24/2023			
2	2022-23/2022			
3	2021-22/2021			
4	2020-21/2020			
5	2019-			

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	20/2019		
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3. Maximum value of projects that have been undertaken during the F.Y. _____ out of the last 5 years and value excluding amount of bonus thereof is Rs. _____ Crores (Rupees _____). Further, value updated to the price level of the year indicated in Appendix is as follows:

Rs. _____ Crores x _____ (Updation Factor as per Appendix) = Rs. _____ Crores (Rupees _____)

4. Amount of bonus received, if any, in EPC Projects during the last 5 years (updated to the price level of the year indicated in Appendix):

Sl. No.	F.Y. / Calendar Year	Amount of Bonus (Rs. in Crores)	Updation Factor	Updated Amount of Bonus (Rs. in Crores)
1	2023-24/2023		1.0	
2	2022-23/2022		1.05	
3	2021-22/2021		1.10	
4	2020-21/2020		1.15	
5	2019-20/2019		1.20	
			(TOTAL)C=	

.....
 Name of the Statutory Auditor's firm: Seal of the audit firm: (Signature, name and designation and Membership No. of authorised signatory)

.....
 Signature, name and designation of Authorised Signatory For and on behalf of(Name of the

Date:
 Place:

To calculate the value of "B"

A table containing value of all the existing commitments and on-going works to be completed during the next ** years is as follows:

Sl. No.	Name of Project/ work	Percentage of participation of Bidder in the project	Date of start / appointed date of project	Construction period as per Agreement LOA	Value of contract as per Agreement/ LOA ^β	Value of work completed	Balance value of work to be completed	Anticipated date of completion	Balance value of work at 2017-18/2017 price level
					Rs. in Crore	Rs. in Crore	Rs. in Crore		Rs. in Crore
1	2	3	4	5	6	7	8=(6-7)	9	10(3x 8x #)

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Updation Factor as given below:

For Year	F.Y. / Calendar Year	Updation Factor
1	2023-24/2023	1.0
2	2022-23/2022	1.05
3	2021-22/2021	1.10
4	2020-21/2020	1.15
5	2019-20/2019	1.20

The Statement showing the value of all existing commitments, anticipated value of work to be completed in the period of construction of the project for which bid is invited and on-going works as well as the stipulated period of completion remaining for each of the works mentioned above is verified from the certificate issued that has been countersigned by the Client or its Engineer-in-charge not below the rank of Executive Engineer or equivalent in respect of EPC Projects or Concessionaire / Authorised Signatory of SPV in respect of BOT Projects. No awarded / on-going works has been left in the aforesaid statement which has been awarded to M/s.....individually / and other member M/s and M/s, as on bid due date of this RFP.

.....
Signature, name and designation of Authorized Signatory For and on behalf of(Name of the Bidder)
Name of the Statutory Auditor's firm: Seal of the audit firm: (Signature, name and designation and Membership No. of Authorized signatory)

Date:

Place:

[[¶] In case balance period of construction is less than the value of period of construction of the project for which bid is invited, then full value of contract as per Agreement/LOA to be mentioned, else, anticipated value of work to be completed in the period of construction of the project for which bid is invited is to be mentioned. In the absence of the anticipated value of work to be completed, the proportionate value shall be considered while evaluating the Assessed Available Bid Capacity]

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Department of Disinvestment

Block 14, CGO Complex
New Delhi.

Dated 13th July, 2001.

OFFICE MEMORANDUM

Sub: Guidelines for qualification of Bidders seeking to acquire stakes in Public Sector Enterprises through the process of disinvestment

Government has examined the issue of framing comprehensive and transparent guidelines defining the criteria for Bidders interested in PSE-disinvestment so that the parties selected through competitive bidding could inspire public confidence. Earlier, criteria like net worth, experience etc. used to be prescribed. Based on experience and in consultation with concerned departments, Government has decided to prescribe the following additional criteria for the qualification/ disqualification of the parties seeking to acquire stakes in public sector enterprises through disinvestment:

- (a) In regard to matters other than the security and integrity of the country, any conviction by a Court of Law or indictment/ adverse order by a regulatory authority that casts a doubt on the ability of the Bidder to manage the public sector unit when it is disinvested, or which relates to a grave offence would constitute disqualification. Grave offence is defined to be of such a nature that it outrages the moral sense of the community. The decision in regard to the nature of the offence would be taken on case to case basis after considering the facts of the case and relevant legal principles, by the Government of India.
- (b) In regard to matters relating to the security and integrity of the country, any charge-sheet by an agency of the Government/ conviction by a Court of Law for an offence committed by the bidding party or by any sister concern of the bidding party would result in disqualification. The decision in regard to the relationship between the sister concerns would be taken, based on the relevant facts and after examining whether the two concerns are substantially controlled by the same person/ persons.
- (c) In both (a) and (b), disqualification shall continue for a period that Government deems appropriate.
- (d) Any entity, which is disqualified from participating in the disinvestment process, would not be allowed to remain associated with it or get associated merely because it has preferred an appeal against the order based on which it has been disqualified. The mere pendency of appeal will have no effect on the disqualification.
- (e) The disqualification criteria would come into effect immediately and would apply to all Bidders for various disinvestment transactions, which have not been completed as yet.
- (f) Before disqualifying a concern, a Show Cause Notice why it should not be disqualified would be issued to it and it would be given an opportunity to explain its position.
- (g) Henceforth, these criteria will be prescribed in the advertisements seeking Expression of Interest (EOI) from the interested parties. The interested parties would be required to provide the information on the above criteria, along with their Expressions of Interest (EOI). The Bidders shall be required to provide with their EOI an undertaking to the effect that no investigation by a regulatory authority is pending against them. In case any investigation is pending against the concern or its sister concern or against its CEO or any of its Directors/ Managers/ employees, full details of such investigation including the name of the investigating agency, the charge/ offence for which the investigation has been launched, name and designation of persons against whom the investigation has been launched and other relevant

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information should be disclosed, to the satisfaction of the Government. For other criteria also, a similar undertaking shall be obtained along with EOI.

sd/-
(A.K. Tewari)
Under Secretary to the Government of India

**ANNEX-VIII
Details of on-going works**

S. No.	Name of the work	Contract Price (INR Cr)	Appointed Date	Original Scheduled Completion Date	Likely Date of Completion	Reason for Delay
1						
2						
3						
...						

(In the event that the Bidder had failed to achieve the Completion of any project within a period of 90 (ninety) days from the Schedule Completion Date of the project, unless such failure had occurred due to Force Majeure or for reasons solely attributable to the Authority, the Bidder shall be deemed to be ineligible for bidding this project (under bidding), both as the sole party or as one of the parties of Joint Venture/ Consortium, if any, during the period from Scheduled Completion Date to issuance of Completion Certificate for that project. This restriction is applicable if the contract value of the delayed project was not less than Rs. 300 Crore.)

#To be supported with valid certificate issued from Independent Engineer / Authority's Engineer / Supervision Consultant / Engineer-in-charge

I / We certify that all the information furnished above is true in all respects.

..... Name of the Bidder

Signature of the authorized signatory: _____

Name of the Authorised Signatory: _____

Date: _____

Place: _____

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APPENDIX-II

Format for Power of Attorney for signing of BID

(Refer Clause 2.1.5)

Know all men by these presents, We..... (name of the firm and address of the registered office) do hereby irrevocably constitute, nominate, appoint and authorize Mr./ Ms (name), son/daughter/wife of and presently residing at, who is presently employed with us/ the Lead Member of our Joint Venture and holding the position of, as our true and lawful attorney (hereinafter referred to as the "Attorney") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our BID for the Project proposed or being developed by the National Highways Authority of India (the "Authority") including but not limited to signing and submission of all applications, BIDs and other documents and writings, participate in Pre-BID and other conferences and providing information/ responses to the Authority, representing us in all matters before the Authority, signing and execution of all contracts including the agreement and undertakings consequent to acceptance of our BID, and generally dealing with the Authority in all matters in connection with or relating to or arising out of our BID for the said Project and/ or upon award thereof to us and/or until the entering into of the EPC Contract with the Authority.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE,, THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS DAY OF 2.....

For
(Signature, name, designation and address)
of person authorized by Board Resolution
(in case of Firm/ Company)/ partner in case of
Partnership firm

Witnesses:

- 1.
- 2.

Accepted

(Signature)

(Name, Title and Address of the Attorney)

(Notarized)

Person identified by me/ personally appeared before me/
Attested/ Authenticated*

(*Notary to specify as applicable)

(Signature Name and Address of the Notary)

Seal of the Notary Registration No. of the Notary

Date:.....

Notes: ♣ The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.

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♣ *Wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/ power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.*

♣ *For a Power of Attorney executed and issued overseas, the document will also have to be legalised by the Indian Embassy and notarised in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalised by the Indian Embassy if it carries a conforming Appostille certificate.*

APPENDIX-III
Format for Power of Attorney for Lead Member of Joint Venture
(Refer Clause 2.1.6)

Whereas the National Highways Authority of India ("the Authority") has invited BIDs for the ***** Project (the "Project").

Whereas,,, and (collectively the "Joint Venture") being Members of the Joint Venture are interested in bidding for the Project in accordance with the terms and conditions of the Request for Proposal (RFP) and other BID documents including agreement in respect of the Project, and

Whereas, it is necessary for the Members of the Joint Venture to designate one of them as the Lead Member with all necessary power and authority to do for and on behalf of the Joint Venture, all acts, deeds and things as may be necessary in connection with the Joint Venture's BID for the Project and its execution.

NOW THEREFORE KNOW ALL MEN BY THESE PRESENTS

We, having our registered office at, M/s. Having our registered office at ..., M/s. ... having our registered office at, and having our registered office at, (hereinafter collectively referred to as the "Principals") do hereby irrevocably designate, nominate, constitute, appoint and authorize M/S having its registered office at, being one of the Members of the Joint Venture, as the Lead Member and true and lawful attorney of the Joint Venture (hereinafter referred to as the "Attorney"). We hereby irrevocably authorize the Attorney (with power to sub-delegate) to conduct all business for and on behalf of the Joint Venture and any one of us during the bidding process and, in the event the Joint Venture is awarded the contract, during the execution of the Project and in this regard, to do on our behalf and on behalf of the Joint Venture, all or any of such acts, deeds or things as are necessary or required or incidental to the pre-qualification of the Joint Venture and submission of its BID for the Project, including but not limited to signing and submission of all applications, BIDs and other documents and writings, participate in pre BID and other conferences, respond to queries, submit information/ documents, sign and execute contracts and undertakings consequent to acceptance of the BID of the Joint Venture and generally to represent the Joint Venture in all its dealings with the Authority, and/ or any other Government Agency or any person, in all matters in connection with or relating to or arising out of the Joint Venture's BID for the in all respect Project and/ or upon award thereof till the EPC Contract is entered into with the Authority & Compelled.

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AND hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us/ Joint Venture.

IN WITNESS WHEREOF WE THE PRINCIPALS ABOVE NAMED HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS DAY OF 2.....

For	For	For
(Signature)	(Signature)	(Signature)
.....
(Name & Title)	(Name & Title)	(Name & Title)

(Executants)

(To be executed by all the Members of the Joint Venture)

Witnesses:

- 1.
- 2.

Notes:

♣ *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.*

♣ *Also, wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/ power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.*

♣ *For a Power of Attorney executed and issued overseas, the document will also have to be legalised by the Indian Embassy and notarised in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalised by the Indian Embassy if it carries a conforming Appostille certificate.*

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**APPENDIX IV
Format for Joint Bidding Agreement for Joint Venture
(Refer Clause 2.1.11)**

(To be executed on Stamp paper of appropriate value)

THIS JOINT BIDDING AGREEMENT is entered into on this the day of
20...

AMONGST

1. {..... Limited, and having its registered office at } (hereinafter referred to as the “First Part” which expression shall, unless repugnant to the context include its successors and permitted assigns)

AND

2. {..... Limited, having its registered office at } and (hereinafter referred to as the “Second Part” which expression shall, unless repugnant to the context include its successors and permitted assigns)

AND

3. {..... Limited, and having its registered office at} (hereinafter referred to as the “Third Part” which expression shall, unless repugnant to the context include its successors and permitted assigns)

The above mentioned parties of the FIRST, {SECOND and THIRD} PART are collectively referred to as the “Parties” and each is individually referred to as a “Party”

WHEREAS,

(A) Kolkata Metropolitan Development Authority (KMDA) (hereinafter referred to as the “Authority” which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns) has invited bids (the Bids”) by its Request for Proposal No. dated(the “RFP”) for award of contract for rehabilitation and augmentation of***** Project (the “Project”) through an EPC mode of turnkey Contract basis.

(B) The Parties are interested in jointly bidding for the Project as members of a Joint Venture and in accordance with the terms and conditions of the RFP document and other bid documents in respect of the Project, and

(C) It is a necessary condition under the RFP document that the members of the Joint Venture shall enter into a Joint Bidding Agreement and furnish a copy thereof with the Application.

NOW IT IS HEREBY AGREED as follows:

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UNNAYAN BHAVAN, MAIN BLOCK, (5th FLOOR)
SALT LAKE, KOLKATA – 700 091**

1. Definitions and Interpretations

In this Agreement, the capitalized terms shall, unless the context otherwise requires, have the meaning ascribed thereto under the RFP.

2. Joint Venture

2.1 The Parties do hereby irrevocably constitute a Joint Venture (the “**Joint Venture**”) for the purposes of jointly participating in the Bidding Process for the Project.

2.2 The Parties hereby undertake to participate in the Bidding Process only through this Joint Venture and not individually and/ or through any other Joint Venture constituted for this Project, either directly or indirectly.

3. Covenants

The Parties hereby undertake that in the event the Joint Venture is declared the selected Bidder and awarded the Project, it shall enter into an EPC Contract with the Authority for performing all its obligations as the Contractor in terms of the EPC Contract for the Project.

4. Role of the Parties

The Parties hereby undertake to perform the roles and responsibilities as described below:

(a) Party of the First Part shall be the Lead member of the Joint Venture and shall have the power of attorney from all Parties for conducting all business for and on behalf of the Joint Venture during the Bidding Process and for performing all its obligations as the Contractor in terms of the EPC Contract for the Project;

(b) Party of the Second Part shall be {the Member of the Joint Venture; and}

(c) Party of the Third Part shall be {the Member of the Joint Venture.}

5. Joint and Several Liability

The Parties do hereby undertake to be jointly and severally responsible for all obligations and liabilities relating to the Project and in accordance with the terms of the RFP and the EPC Contract, till such time as the completion of the Project is achieved under and in accordance with the EPC Contract.

6. Share of work in the Project

The Parties agree that the proportion of construction in the EPC Contract to be allocated among the members shall be as follows:

First Party:

Second Party:

{Third Party :}

Further, the Lead Member shall itself undertake and perform at least 51 (fifty one) per cent of the total length of the project highway if the Contract is allocated to the Joint Venture.

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7. Representation of the Parties

Each Party represents to the other Parties as of the date of this Agreement that:

(a) Such Party is duly organised, validly existing and in good standing under the laws of its incorporation and has all requisite power and authority to enter into this Agreement;

(b) The execution, delivery and performance by such Party of this Agreement has been authorized by all necessary and appropriate corporate or governmental action and a copy of the extract of the charter documents and board resolution/ power of attorney in favour of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Joint Venture Member is annexed to this Agreement, and will not, to the best of its knowledge:

(I) require any consent or approval not already obtained;

(II) violate any Applicable Law presently in effect and having applicability to it;

(III) violate the memorandum and articles of association, by-laws or other applicable organizational documents thereof;

(iv) violate any clearance, permit, concession, grant, license or other governmental authorization, approval, judgment, order or decree or any mortgage agreement, indenture or any other instrument to which such Party is a party or by which such Party or any of its properties or assets are bound or that is otherwise applicable to such Party; or

(v) create or impose any liens, mortgages, pledges, claims, security interests, charges or Encumbrances or obligations to create a lien, charge, pledge, security interest, encumbrances or mortgage in or on the property of such Party, except for encumbrances that would not, individually or in the aggregate, have a material adverse effect on the financial condition or prospects or business of such Party so as to prevent such Party from fulfilling its obligations under this Agreement;

(c) this Agreement is the legal and binding obligation of such Party, enforceable in accordance with its terms against it; and

(d) there is no litigation pending or, to the best of such Party's knowledge, threatened to which it or any of its Affiliates is a party that presently affects or which would have a material adverse effect on the financial condition or prospects or business of such Party in the fulfillment of its obligations under this Agreement.

8. Termination

This Agreement shall be effective from the date hereof and shall continue in full force and effect until Project completion (the "Defects Liability Period") is achieved under and in accordance with the EPC Contract, in case the Project is awarded to the Joint Venture. However, in case the Joint Venture is either not pre-qualified for the Project or does not get selected for award of the Project, the Agreement will stand terminated in case the Applicant is not pre-qualified or upon return of the Bid Security by the Authority to the Bidder, as the case may be.

9. Miscellaneous

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SALT LAKE, KOLKATA – 700 091**

9.1 This Joint Bidding Agreement shall be governed by laws of {India}.

9.2 The Parties acknowledge and accept that this Agreement shall not be amended by the Parties without the prior written consent of the Authority.

IN WITNESS WHEREOF THE PARTIES ABOVE NAMED HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.SIGNED, SEALED AND DELIVERED

For and on behalf of LEAD MEMBER by: (Signature) (Name) (Designation) (Address)	SECOND PART (Signature) (Name) (Designation) (Address)	THIRDPART (Signature) (Name) (Designation) (Address)
--	--	--

In the presence of:

- 1.....
- 2.....

Notes:

1. The mode of the execution of the Joint Bidding Agreement should be in accordance with the procedure, if any, laid down by the Applicable Law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.
2. Each Joint Bidding Agreement should attach a copy of the extract of the charter documents and documents such as resolution / power of attorney in favour of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Joint Venture Member.
3. For a Joint Bidding Agreement executed and issued overseas, the document shall be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney has been executed.

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APPENDIX V
INTEGRITY PACT FORMAT

(To be executed on plain paper and submitted along-with Technical Bid/Tender documents for tenders having a value of Rs. 5 cr or above for Consultancy projects and 100 cr. or above for Construction projects. To be signed by the Bidder and same signatory competent/ authorized to sign the relevant contract on behalf of the MoRTH)

This integrity Pact is made at _____ on this _____ day of _____ 2021.

BETWEEN

Government of West Bengal represented by Superintending Engineer, Circle-I, Roads & Bridge Sector, Kolkata Metropolitan Development Authority, Unnayan Bhavan, Salt Lake, Kolkata 700094 (hereinafter referred to as the “Principal/Owner” which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns)

AND

{Name and address of the Firm/Company}, (hereinafter referred to as “The Bidder(s)/Contractor(s)/Concessionaire(s)” and which expression shall unless repugnant to be meaning or context thereof include its successors and permitted assigns.)

Preamble

Whereas, the Principal has floated the Tender {NIT No.....dtd.....} (hereinafter referred to as “Tender/Bid”) and intends to award, under laid down organizational procedure, contract/s for “Construction of 4 Lane Elevated Corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (near New Town) with connectivity to Salt Lake, Sector V “ (hereinafter referred to as the “Contract”). And Whereas the Principal values full compliance with all relevant laws of the land, rules of land, regulations, economic use of resources and of fairness/ transparency in its relations with its Bidder(s) and/ or Contractor(s)/Concessionaire(s)- And whereas to meet the purpose aforesaid, both the parties have agreed to enter into this Integrity Pact (hereafter referred to as “Integrity Pact” or “Pact”) the terms and conditions of which shall also be read as integral part and parcel of the Tender documents and contract between the parties. Now, therefore, in consideration of mutual covenants contained in this pact, the parties hereby agree as follows and this pact witnesses as under:

Article-1: Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

(a) No employee of the Principal, personally or through family members, will in connection with the Tender for, or the execution of a Contract, demand, take a promise for or accept, for self, or third person, any material or immaterial benefit which the person is not legally entitled to.

(b) The Principal will, during the Tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/

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additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

(c) The Principal will exclude all known prejudiced persons from the process, whose conduct in the past has been of biased nature.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act or any other Statutory Acts or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions as per its internal laid down Rules/Regulations.

Article – 2: Commitments of the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s).

The Bidder(s)/ Contractor(s)/ Concessionaire(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

(a) The Bidder(s)/ Contractor(s)/ Concessionaire(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

(b) The Bidder(s)/ Contractor(s)/ Concessionaire(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contract, submission or non-submission or bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

(c) The Bidder(s)/ Contractor(s)/ Concessionaire(s) will not commit any offence under the relevant IPC/PC Act and other Statutory Acts; further the Bidder(s)/Contractor(s)/Concessionaire(s) will not use improperly, for purposes of completion or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

(d) The Bidder(s)/ Contractor(s)/ Concessionaire(s) of foreign origin shall disclose the name and address of the Agents/ Representatives in India, if any. Similarly, the Bidder(s)/ Contractor(s)/ Concessionaire(s) of Indian Nationality shall furnish the name and address of the foreign principle, if any.

(e) The Bidder(s)/ Contractor(s)/ Concessionaire(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract. He shall also disclose the details of services agreed upon for such payments.

(f) The Bidder(s)/ Contractor(s)/ Concessionaire(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

(g) The Bidder(s)/ Contractor(s)/ Concessionaire(s) will not bring any outside influence through any Govt. bodies/quarters directly or indirectly on the bidding process in furtherance of his bid.

Article - 3 Disqualification from tender process and exclusion from future contracts.

(1) If the Bidder(s)/ Contractor(s)/ Concessionaire(s) before award or during execution has committed a transgression through a violation of any provision of Article2, above

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or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s)/ Concessionaire(s) from the tender process.

(2) If the Bidder(s)/ Contractor(s)/ Concessionaire(s) has committed a transgression through a violation of Article-2 such as to put his reliability or credibility into question, the Principal shall be entitled to exclude including blacklist and put on holiday the Bidder(s)/ Contractor(s)/ Concessionaire(s) for any future tenders/ contract award process. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the Principal taking into consideration the full facts and circumstances of each case particularly taking into account the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder(s)/ Contractor(s)/ Concessionaire(s) and the amount of the damage. The exclusion will be imposed for a maximum of 3 years.

(3) A transgression is considered to have occurred if the Principal after due consideration of the available evidence concludes that “On the basis of facts available there are no material doubts”.

(4) The Bidder(s)/ Contractor(s)/ Concessionaire(s) with its free consent and without any influence agrees and undertakes to respect and uphold the Principal’s absolute rights to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.

(5) The decision of the Principal to the effect that a breach of the provisions of this Integrity Pact has been committed by the Bidder(s)/ Contractor(s)/ Concessionaire(s) shall be final and binding on the Bidder(s)/ Contractor(s)/ Concessionaire, however, the Bidder(s)/ Contractor(s)/ Concessionaire(s) can approach IEM(s) appointed for the purpose of this Pact.

(6) On occurrence of any sanctions/ disqualification etc arising out from violation of integrity pact, the Bidder(s)/ Contractor(s)/ Concessionaire(s) shall not be entitled for any compensation on this account.

(7) Subject to full satisfaction of the Principal, the exclusion of the Bidder(s)/ Contractor(s)/ Concessionaire(s) could be revoked by the Principal if the Bidder(s)/ Contractor(s)/ Concessionaire(s) can prove that he has restored/ recouped the damage caused by him and has installed a suitable corruption prevention system in his organization.

Article – 4: Compensation for Damages.

(1) If the Principal has the Principal shall be entitled to forfeit the Earnest Money Deposit or demand and recover the damages equivalent to Earnest Money Deposit apart from any other legal right that may have accrued to the Principal.

(2) In addition to 1 above, the Principal shall be entitled to take recourse to the relevant provisions of the contract related to Termination of Contract due to Contractor/ Concessionaire Default. In such case, the of the Contractor/ Concessionaire/ Consultant and/ or demand and recover liquidated and all damages as per the provisions of the contract/concession agreement against Termination.

Article – 5: Previous Transgressions

(1) The Bidder declares that no previous transgressions occurred in the last 3 years immediately before signing of this Integrity Pact with any other Company in any country conforming to the anti-corruption/ Transparency International (TI) approach

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or with any other Public Sector Enterprise/ Undertaking in India or any Government Department in India that could justify his exclusion from the tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action for his exclusion can be taken as mentioned under Article-3 above for transgressions of Article-2 and shall be liable for compensation for damages as per Article-4 above.

Article – 6: Equal treatment of all Bidders/ Contractors/ Concessionaires/ Consultants/ Subcontractors.

(1) The Bidder(s)/ Contractor(s)/ Concessionaire(s) undertake(s) to demand from all sub-contractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.

(2) The Principal will enter into agreements with identical conditions as this one with all Bidders/ Contractors/ Concessionaires/ Consultants and subcontractors.

(3) The Principal will disqualify from the tender process all Bidders who do not sign this Pact or violate its provisions.

Article – 7: Criminal charges against violating Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s)/ Sub-contractor(s).

If the Principal obtains knowledge of conduct of a Bidder/ Contractor/ Concessionaire or subcontractor, or of an employee or a representative or an associate of a Bidder/ Contractor/ Concessionaire or Subcontractor, which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Article- 8: Independent External Monitor (IEM)

(1) for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

(2) The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently.

(3) The Bidder(s)/ Contractor(s)/ Concessionaire(s) accepts that the Monitor has the right to access without restriction to all project documentation of the Principal including that provided by the Bidder(s)/ Contractor(s)/ Concessionaire(s) The Bidder(s)/ Contractor(s)/ Concessionaire(s) will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Subcontractor(s) with confidentiality.

(4) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

(5) As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

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Article – 9 Pact Duration

This Pact begins when both parties have legally signed it (in case of EPC i.e. for projects funded by Principal and consultancy services). It expires for the Contractor/~~Consultant~~ 12 months after his Defect Liability Period is over or 12 months after his last payment under the contract whichever is later and for all other unsuccessful Bidders 6 months after this Contract has been awarded.-

If any claim is made/ lodged during his time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above.

Article - 10 Other Provisions.

(1) This pact is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. Kolkata

(2) Changes and supplements as well as termination notices need to be made in writing.

(3) If the Bidder/Contractor/Concessionaire is in a partnership or a consortium Joint Venture partner, this pact must be signed by all partners or consortium members.

(4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(5) Any disputes/ differences arising between the parties with regard to term of this pact, any action taken by the Principal in accordance with this Pact or interpretation thereof shall not be subject to any Arbitration.

(6) The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provision of the extent law in force relating to any civil or criminal proceedings.

In witness whereof the parties have signed and executed this Pact at the place and date first done mentioned in the presence of following witness:-

(For & On behalf of the Principal)

(For & On behalf of the
Bidder/ Contractor/ Concessionaire

(Office Seal)
Place _____
Date _____

Witness 1 : (Name & Address):

Witness 2 : (Name & Address):

{COUNTERSIGNED and accepted by:

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JV Partner}

Appendix-VI

FORM OF BANK GUARANTEE

[Security Deposit/Earnest Money]

To _____ [name of Authority]
_____ [address of Authority]

WHEREAS _____ [name and address of Contractor]
(hereafter called the "Contractor") has undertaken, in pursuance of Letter of
Acceptance (LOA)
No. _____ Dated _____ for _____ construction of
_____ [name of the Project] (hereinafter called the
"Contract").

AND WHEREAS the Contract requires the Contractor to furnish an {Security Deposit}
for due and faithful performance of its obligations, under and in accordance with the
Contract, during the {Construction Period/ Defects Liability Period and Maintenance
Period} in a sum of Rs..... cr. (Rupees crore) (the "**Guarantee Amount**" ¹⁴).

AND WHEREAS we, through our branch
at..... (the "Bank")
have agreed to furnish this Bank Guarantee (hereinafter called the "Guarantee") by
way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees
and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful
performance of the Contractor's obligations during the {Construction Period/ Defects
Liability Period and Maintenance Period} under and in accordance with the Contract,
and agrees and undertakes to pay to the Authority, upon its mere first written
demand, and without any demur, reservation, recourse, contest or protest,
notwithstanding pendency of any suit or injunction application and without any
reference to the Contractor, such sum or sums up to an aggregate sum of the
Guarantee Amount as the Authority shall claim, without the Authority being required
to prove or to show grounds or reasons for its demand and/or for the sum specified
therein.

2. In order to give effect to this Guarantee, the Authority shall be entitled to act as if
the Bank were the principal debtor and any change in the constitution of the
Contractor and/or the Bank, whether by their absorption with any other body or
corporation or otherwise, shall not in any way or manner affect the liability or
obligation of the Bank under this Guarantee.

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3. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.

4. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Contract or to extend the time or period for the compliance with, fulfillment and/ or performance of all or any of the obligations of the Contractor contained in the Contract or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

5. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Contract or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Contract.

6. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.

7. The Guarantee shall cease to be in force and effect on ****\$. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.

8. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

9. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

[\$ Insert date at least 2 (two) years from the date of issuance of this Guarantee]

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10. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Contract.

11. This Guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

Signed and sealed this day of, 20..... at

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

Appendix-VII
(See Clauses 3.3.4)
Format of LOA

Office of the Superintending Engineer
Circle-I, Roads & Bridge Sector
Kolkata Metropolitan Development Authority
(5th Floor), Unnayan Bhavan, Salt Lake, Kolkata-94

Dated,

To,

{Name of selected Bidder}

Subject: {Name of work }- Letter of Acceptance (LOA)-Reg.
Reference: Your bid for the subject work dated

Sir,

This is to notify you that your Bid dated for execution of the {project description}, at your quoted bid price amounting to Rs./- {amount in words} has been determined to be the lowest evaluated bid and is substantially responsive and has been accepted.

1. You are requested to return a duplicate of the LOA as an acknowledgement and sign the Contract Agreement within the period prescribed in Clause 1.3 of the RFP.

2. You are also requested to furnish Additional Performance Security if any for an amount of} within 30 (thirty) days of receipt of this Letter of

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Acceptance (LOA). In case of delay in submission of Additional Performance Security, if any, you may seek extension of time for a period not exceeding 60 (Sixty) days.

3. In case of failure of submission of Additional Performance Security (if any) and within the additional 60 (Sixty) days' time period, the award shall be deemed to be cancelled and Bid security shall be encashed by the Authority .

Yours faithfully,

Authorized signatory}

Appendix VIII
Form for Bank Guarantee for Advance Payment

To,

Kolkata Metropolitan Development
Authority, R&B Sector, Circle – I,
Unnayan Bhavan Block-A,
(5th floor), Salt Lake City,
Kolkata – 700 091

WHEREAS:

- (A) _____ [name and address of contractor] (hereinafter called the "**Contractor**") has executed an agreement (hereinafter called the "**Agreement**") with the [name and address of the authority], (hereinafter called the "Authority") for the construction of the ***** section of ***** on Engineering, Procurement and Construction (the "**EPC**") based turnkey contract basis.

In accordance with Clause 56.0 of the Special terms and condition of the tender, the Authority shall make to the Contractor an simple interest bearing @10 % (herein after called "**Advance Payment**") equal to @10% (ten per cent) of the Contract Price on specific request on the terms of contract . The mobilization advance shall be released only after submission of an unconditional Bank Guarantee from a scheduled bank by the contractor for the amount of advance and interest which will remain valid for the contract period. The mobilization advance together with interest on the advance shall be recovered from running account bills of the contractor. The Advance Payment shall be recovered from the 5th RA Bill @ 5% or more of the advance amount along with outstanding interest on the said advance. The recovery of entire amount shall be completed within 18 months since date of issuance of the work order.. The amount of

{first/second} installment of the Advance Payment is Rs.cr.
(Rupees..... crore) and the amount of this
Guarantee is Rscr.

(Rupees crore) (the "**Guarantee Amount**")\$.

- (B) We, through our branch at.....(the "**Bank**") have agreed to furnish

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this bank guarantee (hereinafter called the "**Guarantee**") for the Guarantee Amount.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful repayment on time of the aforesaid installment of the Advance Payment under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, notwithstanding pendency of any suit or injunction application and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

A letter from the Authority, under the hand of an officer not below the rank of [General Manager in the National Highways Authority of India], that the Contractor has committed default in the due and faithful performance of all or any of its obligations for the repayment of the installment of the Advance Payment under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

2. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
3. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
4. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Advance Payment or to extend the time or period of its repayment or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under

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these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

5. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Advance Payment.
6. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
7. The Guarantee shall cease to be in force and effect on ****\$. Unless a demand or claim under this Guarantee is made in writing on or before the aforesaid date, the Bank shall be discharged from its liabilities hereunder.
8. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
9. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
10. This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

Signed and sealed this day of , 20 at

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

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(Name)

(Designation

) (Code

Number)

(Address)

NOTES:

(i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.

Appendix-IX

Completion Certificate

1. I,..... (Name of the Authority's Engineer), acting as the Authority's Engineer, under and in accordance with the Agreement dated (the "**Agreement**"), for "Construction of 4 Lane Elevated Corridor from EM Bypass near Metropolitan Housing Estate to Mahisbathan (near New Town) with connectivity to Salt Lake Sector V" (the "**Project Elevated Corridor**") on Engineering, Procurement and Construction (EPC) basis through (Name of Contractor), hereby certify that the Tests in accordance with Article 12 of the Agreement have been successfully undertaken to determine compliance of the Project Elevated Corridor with the provisions of the Agreement.
2. Construction works that are incomplete on account of Time Extension have been specified in the Punch List appended hereto, and the Contractor has agreed and accepted that it shall complete all such works in time and manner set forth in the Agreement. In addition, certain minor works are incomplete and these are not likely to cause material inconvenience to the users of the Project Elevated corridor or affect their safety. The Contractor has agreed and accepted that as a condition of this Provisional Certificate, it shall complete such minor works within 30 (thirty) days hereof. These minor works have also been specified in the aforesaid Punch List.
3. In view of the aforesaid, I am satisfied that the "Construction of 4 Lane Elevated Corridor from EM Bypass near Metropolitan Housing Estate to Mahisbathan (near New Town) with connectivity to Salt Lake Sector V" can be safely and reliably placed in service of the Users thereof, and in terms of the Agreement, the project elevated corridor is hereby provisionally declared fit for entry into operation on this theday of 20..... .

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ACCEPTED, SIGNED, SEALED AND DELIVERED
DELIVERED

SIGNED, SEALED AND

For and on behalf of the Contractor by: For and on behalf of the Authority's
Engineer by:

(Signature)

(Signature)

(Name)

(Name)

(Designation) (Address)

(Designation)

(Address)

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GENERAL CONTDITION OF CONTRACT(GCC)



Price Rs. 10/- (Rupees Ten only)

Tender No. _____	Date _____
Issued to _____	

Date of Opening _____	Hours _____

KOLKATA METROPOLITAN DEVELOPMENT AUTHORITY

TENDER FORM - I

Item Rate Tender & Contract for Works

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KOLKATA METROPOLITAN DEVELOPMENT AUTHORITY

(2)

TENDER FOR WORKS

I/We hereby tender for the execution for the KMDA of the work specified in the under written memorandum within the time specified in such memorandum at the rates specified therein, and accordance in all respects with the specifications, designs, drawings, and instructions in writing referred to in Rule -1 hereof and in clause II of the annexed conditions and with such materials are provided for by and in all other respects in accordance with such conditions as far as applicable.

MEMORANDUM

(a) General description

(a) If several sub work are included they should be detailed in a separate list

- (b) Estimated Amount ... Rs.
- (c) Earnest Money deposited in details ... Rs.
- (d) * Security Deposit (including earnest money) ... Rs.
- (e) Percentage, if any, to be deducted from bills ... %
(... Percent)
- (f) Time allowed for the work from date of written order to commence ... days / months

Item No.	Item of work	Unit	Per	Rate tendered	
				In figures	In words

Note : To be continued on additional sheets, if necessary

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(3)

Should this tender be accepted I / We hereby agree to abide by and fulfill all the terms and provisions of the said conditions of contract annexed hereto so far as applicable, or in default thereof to forfeit and pay to the KMDA or his successors in office the sums of money mentioned in the said conditions.

The sum of Rs.....* is herewith forwarded as earnest money the full value of which is to be absolutely forfeited to the KMDA or its successors in office, without prejudice to any other rights or remedies of the said KMDA or its successors in office, should I / We fail to commence the work specified in the above memorandum otherwise the said sum of Rs.....shall be detained by KMDA on account of the security deposit specified in Clause No. 1 of the said conditions of the contract.

* Give particulars and numbers

Dated, the _____ day of 200 _____ †

Witness ±

Address

Occupation

The above tender is hereby accepted by me on behalf of the KMDA
Dated, the _____ day of 200 _____ \$

† Signature of contractor before submission of tender

± Signature of Witness to Contractor's signature

\$ Signature of the officer by whom accepted

CONDITIONS OF CONTRACT

Clause 1 - The person/persons, whose tenders may be accepted (hereafter called the contractors) shall permit the KMDA at the time of making any payment to him for work done under the contract to deduct such sum as along with the sum..... already deposited as earnest money will amount to 10% of the Tendered amount.

Security deposit

Such deductions to be held by KMDA by way of security deposit provided always that the KMDA for this purpose shall be entitled to recover 8 % of the amount of each running bill till the balance of the amount of security deposit is realised. All compensation or other sums of money payable by the contractor under terms of this contract may be deducted from or paid by the sale of a sufficient part of his security deposit, or from the interest arising there from or from any sums which may be due to or may become due to the contractor by KMDA on any account whatsoever and in the event of his/their security deposit being reduced by reason of any such deductions or sale as foresaid, the contractor shall within 10 days make good in cash or fixed deposit receipt tendered by the Sate Bank of India or by Scheduled/Nationalized Banks of Government securities (if deposited for more than 12 months) endorsed in favour of the KMDA any sum or sums which may have been deducted from, or raised by sale of his/their security deposit or any part thereof. The security deposit shall be collected from the running bills of the contractor at the rates mentioned above and the earnest money, if deposited in cash at the time of tenders, will be treated as part of the security deposit.

Clause 2 - The time allowed for carrying out the work as entered in the tender shall be strictly observed by the contractor and shall be reckoned from the date on which the order to commence work is given to the contractor. The work shall throughout the stipulated period for contract be proceeded with all due diligence (time being deemed to be the essence of the contract, on the part of the contractor) and the contractor shall pay as compensation all amount equal to one per cent, or such smaller amount as the Superintending Engineer/Chief Engineer (whose decision in writing shall be final) may decide on the amount of the tender, amount of the whole work as shown in the tender, for everyday that the work remains uncommenced or unfinished after the proper dates. The contractor shall commence execution of such part of the work as may be notified to him within.....days from the date of order for commencement of work and diligently continue such work and further to ensure good progress during the execution of the work and he shall be bound in all cases in which the time allowed for any work exceeds one month, complete one-fourth of the whole of the work, before one-fourth of the whole time allowed under the contract has elapsed, one-half of the work, before one-half of such time has elapsed, and three-fourth of the work before three-fourth of such time has elapsed.

Compensation for delay

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(4)

In the event of the contractor failing to comply with any of the conditions herein he shall be liable to pay as compensation an amount equal to one per cent or such smaller amount as the Superintending Engineer/Chief Engineer (whose decision in writing shall be final) may decide on the said tender amount of the whole work for every day that the due quantity of work remains incomplete PROVIDED ALWAYS that the entire amount of compensation to be paid under provisions of this clause shall not exceed ten per cent of the tendered amount of work as shown in the tender.

Action when whole of security deposit is forfeited

Clause 3 - In any case in which under any clause or clauses of this contract the contractor shall have rendered himself liable to pay compensation amounting to the whole of his security deposit (whether paid in one sum or deducted by instalment) the Executive Engineer, on behalf of the KMDA shall have power to adopt any of the following course as he may deem best suited to interest of KMDA.

- a) To rescind the contract (of which rescission notice in writing to the contractor under the hand of the Executive Engineer shall be conclusive evidence) and in which case the security deposit of the contractor shall stand forfeited, and be absolutely at the disposal of KMDA.
- b) To employ labour paid by KMDA and to supply materials to carry out the work, or any part of the work, debiting the contractor with the cost of the labour and the price of the materials (for the amount of which cost and price a certificate of the Executive Engineer shall be final and conclusive against the contractor) and crediting him with the value of the work done in all respects in the same manner and the same rates as if it had been carried out by the contractor under the terms of this contract; the certificate of the Executive Engineer as to the work done shall be final and conclusive against the contractor.
- c) To measure up the work of the contractor, and to take such part thereof as shall be unexecuted out of his hands and to give it to another contractor to complete, in which case any expense which may be incurred in excess of the sum which have been paid to the original contractor, if the whole work had been executed by him of the amount of which excess the certificate in writing of the Executive Engineer shall be final and conclusive, shall be borne and paid by the original contractor and may be deducted from any money due to him KMDA under the contract or otherwise, or from his security deposits or the proceeds of sale thereof, of a sufficient part thereof.

In the event of any of the above course being adopted by the Executive Engineers the contractor shall have no claim to compensation for any loss sustained by him reason of his having purchased, or procured any materials, or entered into any engagement or made any advances on account of or with a view to executing of the work or the performance of the contract. (And in case the contract shall be rescinded under the provision aforesaid) the contractor shall not be entitled to cover or be paid any sum for any work thereof actually performed under this contract, unless and until the Executive Engineer will have certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

Contractor remains liable to pay compensation if action not taken under Clause-3

Clause 4 - In any case in which any of the powers conferred upon the Executive Engineer by Clause 3 hereof, shall have become exercisable and the same shall not be exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such power shall notwithstanding be exercisable in the event of any future case of default by the contractor for which by any clause or clauses hereof he is declared liable to pay compensation

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(5)

amounting to the whole of his security deposit, and the liability of the contractor for past and future compensation shall remain unaffected in the event of the Executive Engineer putting in force either of the powers (a) or (b) vested in him under the preceding clause, he may, if so desire, take possession of all or any tools, plants, materials and stores, in or upon the works, or the site thereof or belonging to the contractor, or procured by him and intended to be used for the execution of the work or any part thereof, paying or allowing for the same in account at the contract rates or in case of these not being applicable a current market rates to be certified by the Executive Engineer whose certificate thereof shall be final, otherwise the Executive Engineer may by notice in writing to the contractor or his clerk of the works, foreman or other authorized agent required him to remove such tools, plant, materials or stores from the premises (within a time to be specified in such notice) and in the event of the contractor failing to comply with any such requisition the Executive Engineer may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor at his risk in all respects and the certificate of the Executive Engineer as to the expense of any such removal and the amount of the proceeds and expense of any such sale shall be final and conclusive against the contractor.

Power to take possession of, or require removal of or sell contractors plant

Clause 5 - If the contractor desires an extension of the time for completion of the works on the grounds of his having been unavoidable hindered in its execution, the contractor shall give an immediate report of such hindrance to the Executive Engineer in writing and if he desires an extension of time for completion of the work on the ground thereof, he shall apply in writing to the Executive Engineer within 7 days of the date of cessation of such hindrance on account of which he desires such extension as aforesaid and the Executive Engineer shall (if in his opinion which shall be final reasonable grounds be shown thereof) recommend such extension of time, as may, in the opinion, be necessary or proper to the final authority i.e.C.E.O./KMDA through S.E./C.E. as the case may

Extension time

Clause 6 - On completion of the work, the contractor shall be furnished with a certificate by the Executive Engineer (hereunder called the Engineer-in-charge) of such completion, nor shall the work be considered to be completed until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials and rubbish and cleaned of the dirt from all wood-work, door, windows, walls, floors, or other parts of any building, in, upon or about which the work is to be executed, or of which he may had have possession for the purpose of the execution thereof not until the work shall have been measured by the Engineer-in-charge whose measurement shall be binding and conclusive against the contractor. If the contractor shall fail to comply with the requirements of this clause as to removal of scaffolding, surplus materials and cleaning of dirt on or before the date fixed for the completion of the work, the Engineer-in-charge may at the expense of the contractor remove such scaffolding, surplus material and rubbish, and dispose off the same as he thinks fit and clean of such dirt as aforesaid and the contractor shall forthwith pay the amount of all expenses so incurred and shall have not claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realised by the sale thereof.

Final Certificate

Clause 7 - No payment shall be made for work estimated to cost less than Rupees one thousand, till after the whole of the works have been completed and a certificate of completion given. But in the case of works estimated to cost more than Rupees one thousand, the contractor shall on submitting the bill thereof be entitled to receive a monthly payment proportionate to the part thereof, then approved and passed by the Engineer-in-charge whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the contractor. But all such intermediate payments shall be regarded as payment by way of advance against the final payment only and not as payment for work actually done and completed, and shall not preclude the requiring of bad, unsound, and imperfect or unskilful work to be removed and taken away and reconstructed, or re-erected, or be considered as an admission of the due performance of the contract, or any part thereof in any respect of the accruing of any claim nor shall it conclude, determine, or affect in any way the powers of the Engineer-in-charge under these conditions or any of them as the final settlement and adjustment of accounts or otherwise or in any other way very effect of the contract. The final bill shall be submitted by the contractor within one month of the date fixed for completion of the work, otherwise the Engineer-in-charge's Certificate of the measurement and of the total amount payable for the work accordingly shall be final and binding on all parties.

Payment on intermediate certificate to be regarded as advance

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(6)

Bills to be submitted monthly

Clause 8 - A bill shall be submitted by the contractor each month on or before the date fixed by the Engineer-in-charge for all work executed in the previous month and the Engineer-in-charge shall take or cause to be taken the requisite measurement for the purpose of having the same verified and claim, as far admissible, adjusted if possible, before expiry of ten days from the presentation of the bill. If the contractor does not submit the bill within the time fixed as aforesaid, the Engineer-in-charge may depute, a subordinate to measure up the said work in the presence of the contractor, counter signature to the measurement list will be sufficient warrant and the Engineer-in-charge may prepare a bill from such list which shall be binding on the contractor in all respect.

Bills to be on printed forms

Clause 9 - The contractor shall submit all bills on the printed forms to be had on application at the office of the Engineer-in-charge, and the charges in the bills shall always be entered at the rates specified in the tender or in the case of any extra work ordered in pursuance of these conditions, and not mentioned or provided for in the tender at the rates here-in-after provided for such work.

Payment on contractor's bill to Bank

Clause 9A - (1) Payment due to the contractor may, if so desired by him be made to his Bank instead or direct to him, provided that the contractor furnishes to the Engineer-in-charge ;

- (1) an authorisation in the form of a legally valid document irrevocable power or attorney conferring authority or the Bank to receive payment ; and
- (ii) his own acceptance of the correctness of the account made out as being due to him by KMDA or his signature on the bill or other claim preferred against Government before settlement by the Engineer-in-charge of the account or claim by payment to the Bank.

While the receipt given by such Bank shall constitute a full and sufficient discharge for the payment, the contractor should, wherever possible, present his bills duly received and discharged through Bankers.

(2) In the case of bills which the contractor present for payment direct and which are not endorsed in favour of the Bank, while efforts will be made to secure payment to the financing Bank, payments made to the contractor should be accepted as full acquittance so far as KMDA is concerned. As part of the arrangement the financing Bank should give KMDA a letter to this effect.

Note 1 — The procedure will not effect the usual rights of KMDA to deduct from contractor's bill (whether endorsed in favour of a Bank or not) any sum due to KMDA in account of penalties, overpayment etc. on this or any other contract with the KMDA.

Note 2 — Nothing herein contained shall operate to create in favour of the Bank any rights or equities vis-a-vis the Chairman, KMDA.

Stores supplied by KMDA

Clause 10 - If the specification or estimate of the work provides for the use of any special description of materials to be supplied to the Engineer-in-charge's store, or if it is required that the contractor shall use certain stores to be provided by the Engineer-in-charge (such materials and stores and the prices to be charged therefor as hereinafter mentioned being so far as practicable for the convenience of the contractor, but not so as in any way to control the meaning or effect of this contract specified in the schedule or memorandum hereto annexed). The contractor shall be supplied with such materials and stores as required from time to time used by him for the purposes of the contract only, and the value of the full quantity of materials and stores so supplied at the rates specified in the said schedule memorandum may be set off or deducted from any sum then due or thereafter to become due to the contractor under the contract or otherwise, or against or from the security deposit, or the proceeds of sale thereof if the same is held in KMDA securities, the same or sufficient portion thereof being in this case sold for the purpose. All materials supplied to the contractor shall remain the absolute property of KMDA and shall not on any account be removed from the site of the work, and shall at all times be open to inspection by the Engineer-in-charge. Any such material unused and in perfectly good condition at the time of completion or determination of the contract shall be returned to the Engineer-in-charge's store, if by a notice in writing under his hand; he shall so require. But the contractor shall not be entitled to return any such materials unless with such consent, and shall have no claim for compensation on account of any such materials so supplied to him as aforesaid being unused by him, for any wastage in or damage to any such materials.

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(7)

Clause 11 - The contractor shall execute the whole and every part of work in the most substantial and workmanlike manner and both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also confirm exactly, fully faithfully to designs, drawings and instructions, in writing relating to the work signed by the Engineer-in-charge and lodged in his office and to which the contractor shall be entitled to have access as such office, or in the site of the work for the purpose of inspection during office hours, and the contractor shall if he so require, be entitled at his own expense to make or cause to be made copies of the specification, and of all such designs, drawings, and instructions as aforesaid.

Works to be executed in accordance with specifications, drawing, orders etc.

Clause 12 - The Engineer-in-charge shall have power to make any alteration in, omissions from, additions to or substitutions for the original specifications, drawings, designs and instructions, that may appear to him to be necessary or advisable during the progress of the work, and the contractor shall be bound to carry out the work in accordance with any instruction which may be given to him in writing signed by the Engineer-in-charge, and such alterations, omissions, additions or substitutions shall not invalidate the contract, and any altered, additional or substituted work which the contractor may be directed to do in the manner above specified as part of the work, shall be carried out by the contractor on the same conditions in all respect on which he agreed to do the main work on the same basis of rates as are specified in the tender for the main work. The time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work bears to the original contract work and the certificate of the Engineer-in-charge shall be conclusive as to such proportion. If the altered, additional or substituted work includes any class of work, for which no rate is specified in this contract, that class of work shall be carried out at the rates entered in the schedule of rates of the Presidency Circle. P. W. D./P.W.D. (Roads), Govt. of West Bengal the contract specified in the documents minus/plus the percentage which the total tendered amount bears to the estimated cost of the entire work put to tender and if the altered, additional or substituted work is not entered in the said schedule of rates, then the contractor shall within seven days of the date of his receipt of the order to carry out the work inform the Engineer-in-charge of the rate which is his intention to charge for such class of work. If the Engineer-in-charge does not agree to this rate he shall, by notice in writings, be at liberty to cancel his order to carry out such class or work and arrange to carry it out in such manner as he may consider advisable providing always that if the contractor shall commence work or incur any expenditure in regard thereto before the rate shall have been determined as lastly hereinbefore mentioned then and in such case he shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of the determination of the rate as aforesaid according to such rate as shall be fixed by the Engineer-in-charge. In the event of the dispute, the decision of the Superintending Engineer/Chief Engineer shall be final.

Alteration in specification and designs

Do not invalidate contractor

Extension of time in consequence of alteration

Rates for works not in estimated schedule

Clause 13 - If at any time after the commencement of the work the KMDA shall for any reason whatsoever not require the whole thereof as specified in the tender to be carried out, the Engineer-in-charge shall give notice in writing of the fact to the contractor who shall have no claim to any payment or compensation, whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of the full amount of the work not having been carried out, neither he has any claim for compensation by reason of any alteration having been made in the original specification, drawings, designs, and instructions which shall involve any curtailment of the work as originally contemplated.

No compensation for alteration in or restriction of work to be carried out

Clause 14 - If it shall appear to the Engineer-in-charge or his Subordinate-in charge of the work that any work has been executed with unsound, imperfect or unskilful, workmanship or with materials of any inferior description, to that any materials or articles provided by him for the execution of the work are unsound, or of a quality inferior to that contracted for or otherwise not in accordance with the contract the contractor shall on demand in writing from the Engineer-in-charge specifying the work materials or articles complained of notwithstanding that the same construct the work so specified in whole or in part, as the case may require, or as the case may or article at his own proper charge and cost and in the event of his failing to do so within a period to be specified by the Engineer-in-charge in his demand aforesaid then the contractor shall be liable to pay compensation at the rate of one per cent of the amount of the estimate for everyday not exceeding 10 days which his failure to do so shall continue and in the case of any such failure the Engineer-in-charge may rectify or remove, and re-execute the work or remove and replace with others the materials or articles complained of, as the case may be at the risk and expense in all respect of the contractor.

Action and compensation payable in case of bad work

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Contractor of
work to be open
to inspection

Clause 15 - All works under or in course of extension or executed in pursuance of the Contract shall at all times be open to the inspection and supervision of the Engineer-in-charge and his subordinates and the contractor shall at all times during the usual working hours and at all other times at which reasonable notice of the mention of Engineer-in-charge and his subordinates to visit the work shall have been given to the contract, either himself be present to receive order and instructions or have a responsible agent duly accredited in writing present for that purpose. Orders given to the agent shall be considered to have the same force as if they had been given to the contractor himself.

Contractor of
responsible agent
to be present

Clause 16 - The Contractor shall give not less than five days notice in writing to the Engineer-in-charge or his subordinate-in-charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured, and correct dimensions thereof be taken before the same is so covered up or placed beyond the reach of measurement and shall not covered up or placed beyond the reach of measurement without such notice having been given or consent obtained the same shall be uncovered at the contractor's expense, or in default thereof no payment of allowance shall be made for such work or the materials with which the same was executed.

Notice to be given
before work is
cover up

Contractor liable
for damage done
and for
imperfections for
three months after
certificate

Clause 17 - If the contractor or his workmen or servants shall break, deface, injure or destroy any part of a building, in which they may be working or any building, road, road kerbs, enclosure, water pipes, cables, drains, electric or telephone post or wires, trees, grass or grassland or cultivated ground contiguous to the premises on which the work or any part of it is being executed or if any damage shall happen to the work, while in progress from any cause whatsoever or any imperfections become apparent in it within three months (six months in the case of a road work) after a certificate final or otherwise of its completion shall have been given by the Engineer-in-charge as aforesaid, the contractor shall made the same good at his other workmen and deduct the expense (of which the certificate of the Engineer-in-charge) shall or from his security deposit, or the proceeds of the sale or of thereof a sufficient portion thereof.

The Security deposit of the contractor made in the manner provided in clauses thereof shall be refundable on the expiry of 3 months (6 months in the case of a road work) after the issue of the certificates final or otherwise of the completion of the work, subject to the condition that no such refund of security deposit shall be allowed till the final bill has been prepared and passed. Provided, however, that in the case of a road work if in the opinion of the Engineer-in-charge, half of the security deposit is sufficient to meet all the liabilities of the contractor under this contract, half of the security deposit may be refunded after 3 months of the issue of the said certificate of completion. Provided further that in the case of any work (whether road, building, bridge, electrical, sanitary and plumbing etc.) where is the Engineer-in-charge is satisfied that the contractor after completion of the major portion of the contract is unable to execute remaining part of the work for reason beyond his control, the Engineer-in-charge in his discretion may make a proportionate refund of the security deposit to the contractor.

The contractor shall responsible for the rectifying defects in asphaltic work noticed within year from the date of the completion of the work and the portion of the security deposit relating to asphaltic work shall be refunded after the expiry of this period.

Contractor to
supply plant,
ladders
scaffolding etc.

Clause 18 - The contractor shall supply at his own cost, material (except such special materials, if any, as may in accordance with the contract be supplied from, the Engineer-in-charge's Stores), plant, tools, appliances, implements ladders, cordage, tackle, scaffolding and temporary works requisite for the proper execution of the work whether original altered or substituted and whether included in the specification or other documents forming part of the contract referred to in this condition or not or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-charge as to any matter, as to which under these conditions he is entitled to be satisfied or which he is entitled to require

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together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of person with the means and materials necessary for the purpose of setting out works and counting, weighing and assisting in the measurement or examination at any time and from time to time of the work of materials. Failing his so doing the same may be provided by the Engineer-in-charge at the expense of the contractor and the expense may be deducted from any money due to the contractor under the contract, or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof. The contractor shall also provide all necessary fencing and lights required to protect the public from accident, and shall be bound to bear the expenses of defence of every suit action of other proceeding at law that may be brought by any person for injury sustained owing to the neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person or which may with the consent of contractor be paid to compromise any claim by any such person.

And is liable for damage arising, from non-arising, from non-provision of light, fencing etc.

Clause 18A - Contractor shall be responsible for and shall take proper care and caution in respect of all rollers, machinery, tools and implements as may be made over by the KMDA to the contractor for use in the execution of the works under this contract and shall be liable for any loss or any damage caused to the said rollers, machinery, tools and implements by reason, whatsoever, during the period the same are in possession of the contractor and shall on demand pay to KMDA of such amount as may be fixed by the KMDA for such loss and damage, the decision of the KMDA in that respect being final, should the contractor fail or neglect to pay such amount on demand the KMDA shall have the right and be entitled, in addition to the other rights and remedies available to it to deduct such amount from the amount of security deposited by the contractor and/or any amount remaining payable to the contractor for any work done by the contractor.

Clause 18B - In every case in which by virtue of the provisions of Section 12, Sub-section (1) of the Workmen's Compensation Act, 1923 KMDA is obliged to pay compensation to a workman employed by the contractor, in execution of the works, KMDA will recover from the contractor the amount of the compensation so paid, and without prejudice to the right KMDA under Section 12, Sub-section (2) of the said Act, KMDA shall be at liberty to recover such amount or any part thereof by deduction it from the security deposit or from any sum due by the KMDA to the contractor whether under this contract or otherwise.

KMDA shall not be bound to contest any claim made against Section 12 Subsection (i) of the said act, except on the written request by the contractor and upon his given to KMDA full security for all costs for which KMDA might become liable in consequence of contesting such claim.

Clause 19 - No female labour shall be employed within the limits of a cantonment.

Labour

Clause 19A - No labour below the age of 12 years shall be employed on the work.

Clause 19B - Payment of wages of labour -

- (a) "The contractor shall pay to labour employed by him either directly or through sub-contractor, wages not less than fair wages as defined in CPWD contractor's Labour Regulations in so far as such regulations have application within the State of West Bengal or as per the provision of the Contract Labour (Regulation and Abolition) Act, 1970 and the Contract Labour (Regulation and Abolition) Central Rules 1971 wherever applicable.
- (b) The Contractor shall notwithstanding the provision of any contract of the contrary cause to pay fair wages to labour indirectly engaged on the work, including one engaged by his sub-contractors in connection with the said work, as if the labour has been employed by him.

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- (c) In respect of all labour directly or indirectly employed in the work for performance of the contractor's part of this agreement the contractor shall comply with or cause to be complied with the Central Public Works Department Contractors Labour Regulations as mentioned in Sub-para (a) above made from time to time in regard to payment of wage, wage period, deductions from wages, recovery of wages not paid and deductions unauthorisedly made, maintenance of wage books or wage slips, publications of scales of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act 1970 and the Contract Labour (Regulation and Abolition) Rules 1971 wherever applicable.
- (d) The Executive Engineer/Engineer-in-charge concerned shall have the right to deduct from the moneys from moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfilment of the conditions of the contract for the benefit of the workers non-payment of wages or deductions made from his or their wages which are not justified by their terms of contract or non-observance of the Regulations as mentioned above.
- (e) The contractor shall comply with the provisions of Wages Act, 1936, minimum Wages Act, 1945, Employee Liability Act, 1938 Industrial Dispute Act, 1947, Maternity Benefit Act, 1961 and the Contract Labour (Regulations and Abolition) Act, 1970 or the modification thereof or any other Laws relating thereto and the Rules made thereunder from time to time.
- (f) The contractor shall indemnify KMDA against payment to be made under and for the observance of the laws aforesaid and the CPWD Contractor's Labour Regulations having application within the State of West Bengal without prejudice to his right to claim indemnity from his sub-contractors.
- (g) The Regulation aforesaid shall be deemed to be a part of his contract and any breach thereof shall be deemed to be breach of contract."

Clause 20 - No work shall be done on Sunday without the sanction in writing of the Engineer-in-charge.

Clause 21 - The contract shall not be assigned or sublet without specific order from KMDA in respect of specified sub-contractor. And if the contractor shall assign or sublet his contract or attempt so to do, or become insolvent or commence any insolvency proceeding or make any composition with his creditors, or attempt so to do or if any bribe, gratuity, gift, ^{in the form of} perquisite, reward or advantage, pecuniary or otherwise shall either directly or indirectly be given, promised or offered by the contractor or may of his servants or agents to any public officer or person in the employ of KMDA in any relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Executive Engineer may thereupon by notice in writing rescind the contract, the security deposit of the contractor shall thereupon stand forfeited and the absolutely at disposal of KMDA and the same consequences shall ensure as if the contract had been rescinded under Clause 3 thereof and in addition, the contractor shall not be entitled to recover or be paid for any work therefor actually performed under the contract.

Clause 22 - All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of KMDA without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

Clause 23 - In the case of a tender by partners any change in the Constitution of the Firm shall forthwith notified by the contractor to the Engineer-in-charge for the information.

Work on
Sundays

Work not to be
sublet

Contract may be
rescinded and
security deposit
forfeited for
subletting bribing
or if contractor
become insolvent

Sum payable by way of
compensation to be
considered as
reasonable compen-
sation without reference
to actual loss

Change in
Constitution of the
Firm

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Clause 24 - All works to be executed under the contract shall be executed under the direction and subject to the approval in all respect of the Chief Engineer/ Superintending Engineer for the time being, who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to be carried on.

Work to be under direction of Chief Engineer / Superintending Engineer

Clause 25 - The contractor shall obtain from the stores of the Engineer-in-charge all stores and articles of Foreign manufacture which may be required for the work, or any part thereof or in making up articles required thereof in connection therewith, unless he has obtained permission in writing from the Engineer-in-charge to obtain such stores and articles elsewhere. The value of such stores and articles as may be supplied to the contractor by the Engineer-in-charge will be debited to the contractor in his account at the rates shown in the schedule attached to the contract and if they are not entered in the schedule, they will be debited at the cost price which for the charge, the cost being recoverable in addition and all other expenses whatsoever, which shall have been incurred in obtaining delivery of the same at the store aforesaid.

Stores of Foreign manufacture to obtained from KMDA

Clause 26 - When the estimate on which the tender is made includes lump sums in respect of part of the work, the contractors shall be entitled to payment in respect of the items of work involved or the parts of the work in question the same rates as are payable under this contract for such item, or if the part of the work in question is not, in the opinion of the Engineer-in-charge, capable of the measurement, the Engineer-in-charge may at his discretion pay the lump sums amount entered in the estimate, to the contractor with regard to any sum or sums payable to him under the provisions of the clause.

Lump sums in estimates

Clause 27 - In the case or any class of work for which there is no such specification mentioned as in Rule 1, such work shall be carried out in accordance with the Specification and in the event of there being no specification then in such case the work shall be carried out in all respect in accordance with the instructions and requirement of the Engineer-in-charge.

Action where no specification

Clause 28 - The expression "work of works" where used in the conditions shall unless there be something either in the subject or context repugnant to such construction be construed, and taken to meant the works by or by virtue of the contract contracted to be executed, whether temporary or permanent and whether original, altered, substituted or additional.

Defination of work

Clause 29 - The contractor(s) shall at his/their own cost provide his/their labour with hutting on an approved site, and shall make arrangement for conservancy and sanitation in the labour camp to the satisfaction of the local Public Health and Medical Authorities. He/They shall also at his/their own cost make arrangements for the laying of pipelines for water supply to his/their labour camp from the existing mains wherever applicable, and shall pay all fees, charges and expenses in connection therewith and incidental thereto.

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ADDITIONAL CONDITIONS

1. Cement found surplus after the completion of a work should be returned to the Engineer-in-charge, the value of the cement returned to the KMDA will be credited to the contractor. If any contractor is found to have used the surplus cement for his own purpose or otherwise disposed of it without the written consent of Engineer-in-charge or his nominee, he may be held guilty of theft. In this connection, the provision of Clause 10 may be referred to where it is clearly stated that all materials issued to the contractors shall remain the property of KMDA.
2. The contractor shall have to make his own arrangements for water, both for the work and use by his coolie etc. for road-rollers and for all tools and plants, etc. required on the work.
3. Contractor will be responsible for the payment of all water charges, payable to the Kolkata Municipal Corporation or any other water works authority including Government department concerned.
4. If the contractor shall desire an extension of the time for completion of the work under Clause 5 of the contract, an application for such extension will not be entertained if it is not received in sufficient time to allow the Engineer-in-charge to consider it and the contractor will be responsible for the consequences arising out of the negligence in this respect.
5. The contractor will have to leave ducts in walls and floors to run conduit or cables, where necessary and he will not be entitled to any extra payment on this account.
6. Contractors in the course of their work should understand that all materials (e.g. stores and other materials) obtained in the work of dismantling excavation etc. will be considered as KMDA property and will be disposed of to the best advantage of KMDA.
7. Owing to difficulty obtaining certain materials in the open market due to scarcity KMDA have undertaken to supply materials specified in the Schedule on page 12 of the Tender Form at rates stated therein. There may be delay in obtaining the materials by the department and the contractor is, therefore, required to keep himself in touch with the day-to-day position regarding the supply of materials from the Engineer-in-charge and do adjust the progress of the work so that their labour may not remain idle nor may there be any other claim due to or arising from delay in obtaining the materials. It should be clearly understood that no claim whatsoever shall be entertained by the KMDA Government on account of delay in supplying materials.
8. The minimum period for which a road - roller is required to be used by a contractor shall be determined by the Executive Engineer on the basis of the quantity of metal that can be consolidated by a roller per day and the Executive Engineer's decision shall be final. If the roller be required to work for a longer period due to bad arrangement of the contractor-shortage of water, etc. additional hire charges shall be levied at the rates specified below under "A-Hire charges" for the additional period of the roller work.
9. No compensation for any damage done by rain or traffic during the execution of the work will be made.
10. Whenever a work is carried out in a Municipal area electric lights or electric danger signals wherever applicable shall be provided by the contractors on the barriers as paraffin lights. Facilities for the electric connection will be made by KMDA but the contractor will bear all the expenses.
11. The contractor should quote through rate inclusive of cost of materials and carriage to place of working.
12. The contractor should give complete specifications showing the method of execution and the quantity and quality of materials be intend to use.

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13. In case where canal water is used by the contractor, he will be required to deposit in advance with the Engineer-in-charge the charges for water which are to be calculated in accordance with the schedule of miscellaneous rates in the Canal Act.

14. It must be clearly understood by the contractor that no claim on account of enhanced rates and those already accepted due to war fluctuations will be entertained during the currency of this contract for the work as per schedule attached to the agreement and the additional work, if any, under Clause 12 of the contract, if such additional work shall consist of items which have already been quoted for, or items not quoted for but appear in the said schedule.

15. In the event of emergency the contractor will be required to pay his labour every day and if this is not done, KMDA shall make the requisite payment as would have been paid by the contractor and recover the cost from the contractor.

INCONVENIENCE TO THE PUBLIC

16. The contractor(s) shall not deposit materials on any site which will seriously inconvenience to the public. The Engineer-in-charge may require the contractor(s) to remove any of the materials, which are considered by him to be a danger or inconvenience to the public or cause them to be removed at the contractor's cost.

17. The contractor undertakes to have the site clean, free from rubbish to the satisfaction of the Engineer-in-charge. All surplus materials, rubbish etc. will be removed to the place fixed by the Engineer-in-charge and nothing extra will be paid.

18. The contractor shall not allow any rubbish or debris to remain on the premises during or after repairs, but shall remove the same and keep the place neat and tidy during the progress of the work. The Engineer-in-charge may get the site or premises cleared of debris etc. and recover the cost from the bill of the contractor, if the latter shows slackness in observing this clause.

19. Material brought at site shall not be stacked at random. The contractor shall stack all these materials as directed by the Engineer-in-charge.

**ADDITIONAL CONDITIONS WHEN ROAD-ROLLERS ARE
SUPPLIED BY THE KMDA / GOVERNMENT**

Road-Rollers, if available, shall be supplied by the KMDA/Government upon payment of hire charges at the rates and on the conditions specified below. The contractor should requisition Road-Rollers at least two weeks before the date on which the same are required mentioning the date on which delivery is desired. In case, rollers cannot be made available to the contractor on that date, requisite extension of time shall be granted to the contractor for completion of the work, but the contractor shall not be entitled to claim any compensation for loss of labour or any other cause whatsoever:

A-HIRE CHARGES

(1) Petrol, diesel or steam Road-Rollers 8 tons or over at the rates as per prevailing Schedule rate (enclosed).

The departmental crew (i.e. a driver and a fireman or cleaner) for each roller ordinarily provided by the department and their pay will be recovered extra from the contractor at the rates as per prevailing schedule rate (enclosed).

1. (a) The Road-Roller will be made over and taken back at the site of the work. The roller charges (which included the hire charges and the wages of the departmental crew) shall be recovered at the prescribed rates from the date of roller is made over till the date it is taken back even though the rollers may not have been working. If however, any roller remains idle for two or more days at a stretch for any of reason or reasons mentioned below and provided the contractor

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submits within a week of the date of occurrence of the contingency, an application through the Asstt. Engineer's Office to the Engineer-in-charge, praying for exemption from payment of roller charges (showing reasons and particulars for exemption), the Engineer-in-charge may at his discretion and if he is satisfied that there were sufficient reasons, allow exemption from payment of the said roller charges for such days as he may consider reasonable under the circumstances.

THE REASONS FOR WHICH EXEMPTION BE ALLOWED ARE

- (i) Continued unfavorable weather condition for carrying out particulars type of work on which the roller is engaged.
- (ii) Lack of roller work for reasons beyond the control of the contractors.
- (iii) Diversion of the roller by the Engineer-in-charge to other works.
- (iv) Any other reasons precluding the work of the roller.

The contractor shall not in any event be entitled to claim any compensation for loss of labour or for any other loss whatsoever which may have been incurred by him during the period for which exemption from payment of the charges is allowed.

(b) The rollers and other equipments shall be fully utilized for the purpose for which the same are made over and shall not be allowed to remain idle when they are in working condition. The time limits for the working-days for each type of rolling shall be fixed according to the limits of work output given in Statement I & II below. If the actual number of days of roller work exceed the limit, the hire charges and the wages of the departmental crew shall be charged at double the prescribed rates. If the actual number of days of roller work is less than the number of days calculated on the specified floor limit for the number of days in excess of such limit, the hire charges and the wages of the departmental crew shall be charged at double the prescribed rates. If the actual number of days of roller work is less than the number of days calculated on the specified ceiling limit, the hire charges for the roller and the wages of the departmental crew shall be recovered of number of days calculated on the specified ceiling limit. In the all cases part of a day shall be counted as full day.

2. The departmental crew shall be on operational charges of the roller, but the guarding of the machinery will have to be arranged by the contractor at his own cost.

3. The roller issued to the contractor is to work for 6 days in a week with stoppage of work on the seventh day for general cleaning and petty repairs. Contractors will pay for hire charges as well as for wages of the departmental crew for the whole week i.e. 7 days.

4. Clean water for operating and washing the rollers shall be supplied by the contractor at his cost.

5. Fuel, (petrol, diesel or steam coal) and ancillaries such as match boxes, kerosine oil, fire wood and cotton waste for work in lighting up, cleaning etc., of road-rollers shall have to be supplied by the contractor at the expenses, steam coal for steam road-rollers and diesel oil for diesel road-roller may however be supplied by the department at the rates specified in the agreement and cost debited to the contractor's account accordingly.

6. The grease and lubricating oil required for operating and maintenance of the rollers shall be supplied by the department free of cost.

SPECIFICATION COVERING ISSUE OF ROAD-ROLLERS

The number of working days to be allowed for finishing each individual item of work shall be calculated on the basis of limits of work output specified in Statement I & II.

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STATEMENT - I
(A) FOR PETROL, DIESEL OR STEAM ROAD-ROLLERS 8 TONS OR OVER
TABLE
WORK OUT-PUT PER WORKING DAY OF 8 HOURS

Sl. No.	Item of work	Floor limit (Maximum)	Ceiling limit (Maximum)
1.	Rolling Sub-Grade	1490 Sq. M.	2230 Sq. M.
2.	Rolling over bricket soling	800 Sq. M.	1200 Sq. M.
3.	Rolling Boulder soling		
	(a) Stone (except laterite or slag boulders)	560 Sq. M.	930 Sq. M.
	(b) Leterite boulders	740 Sq. M.	1120 Sq. M.
4.	Consolidation of ballast (size within the range of 75 to 125 mm)		
	(a) Broken stone (Pakur or Rajmahal or Chandil or similarly hard stone)	23 Cu. M.	35 Cu. M.
	(b) Broken stone or varieties softer than (a) above	25 ..	40 ..
	(c) Broken slag metal	25 ..	40 ..
	(d) Leterite or jhama metal	35 ..	50 ..
	(e) Unbroken stone (e.g. single)	35 ..	50 ..
	(f) Brick bats	35 ..	50 ..
5.	Consolidation of metal (size within the range of 40 of 75 mm)		
	(a) Broken stone metals (Pakur or Rajmahal or Chandil or similarly hard stone)	14 Cu. M.	23 Cu. M.
	(b) Broken stone metals of varieties softer than (a) above	17 ..	30 ..
	(c) Broken slag metal	17 ..	30 ..
	(d) Leterite or jhama metal	30 ..	45 ..
	(e) Unbroken Stone (e.g. single or gravel)	35 ..	50 ..
6.	Consolidation of Moorum	35 Cu. M.	50 Cu. M.
7.	Consolidation of Cinder	120 Cu. M.	180 Cu. M.
8.	Rolling dry chips/Bajri/Gravel in surface dressing works		
	(a) On water bound surface	560 Sq. M.	1120 Sq. M.
	(b) On Back top surface	650 Sq. M.	1300 Sq. M.
9.	Rolling premixed bituminous macadam		
	(a) 50 mm thick	185 Sq. M.	370 Sq. M.
	(b) 75 mm thick	140 Sq. M.	280 Sq. M.
10.	Rolling premixed carpet with Chips/Bajri/Gravel		
	(a) in 20 mm (nominal) thick carpet	370 Sq. M.	740 Sq. M.
	(b) in 25 mm (nominal) thick carpet	325 Sq. M.	650 Sq. M.
	(c) in 40 mm (nominal) thick carpet	235 Sq. M.	470 Sq. M.
11.	Repairing potholes	14 Cu. M.	25 Cu. M.

N.B. - In case of items not covered by the above or by any stipulation of a particular contract, the limits will be decide by the Engineer-in-charge.

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STATEMENT - II

(B) FOR PETROL, DIESEL OR STEAM ROAD-ROLLERS 6 TONS OR LESS

The limit of work out-put to be allowed for Petrol, Diesel or steam Road-Roller of 6 tons or less 25% less than the limit for the corresponding items in Statement - I above.

TAR AND BITUMEN

1. The contractor undertakes to make arrangements for the supervision of the work by the firm supplying tar or bitumen used.

2. The contractor shall collect the total quantity of tar-or bitumen required for the work as per standard formula, before the process of painting is started and shall hypothecate it to the Engineer-in-charge against money advanced by KMDA. If any bitumen or tar remain unused on completion of the work on account of lesser used of materials in actual execution, for reasons other than authorised charges in specification and abandonment of portion of work, a corresponding deduction equivalent to the cost of unused materials as determined by the Engineer-in-charge shall be made and the materials returned to the contractor, although the materials are hypothecated to KMDA, the contractor undertakes the responsibility for their proper watch, safe custody and protection against all risks. The materials shall not removed from the site of work without the consent of the Engineer-in-charge in writing.

ADDITIONAL CLAUSE

1. In case where the responsibility of despatch of stores rests with the suppliers but the freight is payable by the purchaser, the supplier should despatch the stores by the most economical method, using the full wagon load whenever it is possible and economical to do so, failing which the supplier will render himself liable for the whole or part of any avoidable expenditure caused by such default.

2. The contractor will have to make his own arrangement for the carriage of Materials.

3. Imported labour may be allotted to contractors at the market rate for labour employed in the locality in the case where the employment of this labour by the contractors as of mutual advantages to KMDA and the contractor.

But in case where the contractor has failed to secure his own labour, imported labour may be forced on him at rate to be decided by the Chief Engineer/Superintending Engineer. The decision of the Chief Engineer/Superintending Engineer to the circumstances in which the employment of imported labour is of mutual advantage will be final and binding on all parties to the contract.

In other cases imported labour need not be forced on contractor but the Engineer-in-charge should at once given in writing to all contractors that if they object to taking labour from the Government now but latter require labour to complete their work in time, will be allotted Government labour as available and will be charged full cost at the rate/ rates specified in the said written notice.

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Special Conditions of Contract(SCC)

Preamble:

The conditions of contract for this work consist of two parts:

- a. The General Conditions of Contract (GCC) as set out printed Tender Form -1 of KMDA.
- b. Special Conditions of Contract (SCC) – this document.

General Condition of Contract (GCC) is the basic set of conditions of contract to be used in this works and all modifications in Special Condition of Contract are with reference to General Condition of Contract (GCC)

Special Condition of Contract (SCC) *modifies, complements, supplements, replaces* some of the clauses of General Condition of Contract (GCC) as appropriate for the works being tendered for.

Clauses in Special Conditions of Contract (SCC) :-

Modifications/additions/deletion/insertions/replacements have been made to the following existing clauses and sub-clauses of the General Condition of Contract (GCC):-

Rule-8:- Deleted

Clause-1:- Add with the existing clause;

“Earnest Money”– the bidder shall have to deposit Earnest Money of Rs.13.59 crores as per procedure of e-tendering mentioned in e-NIT and Instructions to Bidders (ITB).

Clause-5:- Add with existing clauses;

The contractor /bidder shall only be entitled to extension of time. No companion shall be entitled for extension of time.

Clause-7:- Add in line 4 after “monthly” with existing clauses;

“mothly”/may be two month.

Clause-8:- Add with existing clauses;

The bill may be submitted monthly/once in two month as decided by the Engineer-in-Charge.

The period of bill payment may be two month; delay making payment of bills will not attract any compensation / interest.

Clause-9:- Add with existing clauses;

The period of bill payment may be two month; delay making payment of bills will not attract any compensation / interest

Clause 10:- Deleted

Clause-12:- Add with existing clauses;

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Due to alternate, omission, addition, substitution etc. for the original specification, drawings, design and instruction of the contract work, the contractor shall only entitled to extension of time, the contractor shall not be entitled to any compensation.

Clause-17:- Deleted and Add the following:-

If the contractor or his workmen or servants shall break, deface, injure or destroy any part of a building, in which they may be working or any building, road, road kerbs, enclosure, water pipes, cables drains, bridge, flyover, electric or telephones post or wires, trees, grass or grassland or cultivated ground contiguous to the premises on which the work or any part of it being executed or if any damages shall happen to the work, while in progress from any cause whatever or any imperfections become apparent in it within five years after a certificate final or otherwise of its completion shall have been given Engineer-in-Charge as aforesaid, the contractor shall made the same good at his other workmen and deduct the expense (of which the certificate of the Engineer-in-Charge) shall or from his security deposit, or the proceeds of the sale or of thereof a sufficient portion thereof.

The Defect Liability Period for the work is 5 (Five) year from the actual date of completion of the work.

d) No security deposit shall be refunded to the contractor for first 3 (three) year from the actual date of completion of the work.

e) 30% of the security deposit shall be refunded to the contractor on expiry of 4 (Four) years from the actual date of completion of the work.

f) The balance 70% of the security deposit shall be refunded to the contractor on expiry of 5 (five) years from the actual date of completion of the work.

Provided further that in the case of the any works (whether building, roads, bridge, flyover, electrical, sanitary and plumbing etc.) where is the Engineer-in-Charge is satisfied that the contractor after completion of major portion of the contract is unable to execute remaining part of the work for reason beyond his control, the Engineer-in-Charge in his discretion may make a proportionate refund of the security deposit to the contractor.

The contractor shall responsible for the rectifying defects in asphaltic work noticed within as early as possible from the date of completion of the work and the portion of the security deposit relating to the asphaltic work shall be refunded after the expiry of this period.

Clause 25:- Deleted

Page 12:- The entire page Deleted

ADDITIONAL CONDITIONS

1. Deleted
4. Add with the existing clauses

The contractor /bidder shall only be entitled to extension of time; no compensation shall be entitled for extension of time.

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7. Deleted

8. Deleted

**ADDITIONAL CONDITIUNONS WHEN ROAD ROLLER ARE SUPPLIED BY
KMDA/GOVERNMENT**

The entire clauses are deleted.

A-HIRE CHARGES ----- The entire clauses are deleted.

THE REASONS FOR WHICH EXEMPTION BE ALLOWED

The entire clauses are deleted

**SPECIFICATION COVERING ISSUE FOR ROAD ROLLERS, STATEMENT-I,
STATEMENT-II.**

The entire clauses are deleted

ADDITIONAL CLAUSES

1. Deleted

2. The last paragraph deleted

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SPECIALAL TERMS AND CONDITION

GENERAL	<p>1.0 Definitions:-</p> <p>"Accounting Year" means the financial year commencing from the first day of April of any calendar year and ending on the thirty-first day of March of the next calendar year.</p> <p>"Agreement" means this Agreement, its Recitals, the Schedules hereto and any amendments thereto, or any supplementary agreement made in accordance with the provisions contained in this Agreement;</p> <p>"Applicable Permits" means all clearances, licenses, permits, authorisations, no objection certificates, consents, approvals and exemptions required to be obtained or maintained under Applicable Laws in connection with the construction, operation and maintenance of the Project Elevated Corridor during the subsistence of this Agreement;</p> <p>"Bank" means a bank incorporated in India and recognized by the Reserve Bank of India</p> <p>"Bid" means the documents in their entirety comprised in the bid submitted by the [selected bidder / Joint venture] in response to the Request for Proposal in accordance with the provisions thereof;</p> <p>"Construction Period" means the period commencing from the Appointed Date and ending on the date of the Completion Certificate;</p> <p>Contractor" shall have the meaning attributed thereto in the array of Parties hereinabove as setforth in the Recitals;</p> <p>"EPC" means engineering, procurement and construction;</p> <p>"GOWB" or "Government" means the Government of West Bengal;</p> <p>"IRC" means the Indian Roads Congress;</p> <p>"GAD" means "General Arrangement Drawings"</p> <p>"Joint Venture" means the group of entities which have come</p>
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		<p>together for implementation of this Project;</p> <p>“Lead Member” shall, in the case of a joint venture, mean the member of such joint venture who shall have the authority to bind the contractor and each member of the Joint venture; and shall be deemed to be the Contractor for the purposes of this Agreement; the Lead Member shall itself undertake and perform at least 51 % (fifty one per cent) of the total length of the Project Elevated Corridor;</p> <p>“LOA” or “Letter of Acceptance” means the letter of acceptance issued by the Authority/employer.</p> <p>“MORTH” means the Ministry of Road Transport and Highway</p> <p>“Re.”, “Rs.” or “Rupees” or “Indian Rupees” or “INR” means the lawful currency of the Republic of India;</p> <p>“Right of Way” means and refers to the total land required and acquired for the project, both in its width and length, together with all way leaves, easements, unrestricted access and other rights of way, howsoever described, necessary for construction and maintenance of the Project Elevated Corridor</p> <p>“Employer” Kolkata Metropolitan Development Authority (KMDA)</p>														
	1.1	All works are to be carried out in accordance with Special Terms and Conditions and Technical Specifications as mentioned herein after.														
	1.2	The specifications for works not covered by the technical specifications provided in the Bidding Documents shall be governed by MORTH specifications, IRC/IS/BIS codes of practices according to the Engineer in Charge.														
	1.3	<p>The contract documents are to be taken as a whole. The several documents for making the contract are to be taken as mutually explanatory of one of another. If, however, the stipulations of the different documents be at variance in any respect, one will override the others (only in so far as these are at variance) in order of precedence as given below:</p> <table border="1"> <tr> <td>(k)</td> <td>letter of Intent(L.O.I)/Letter of Acceptance (LOA)</td> </tr> <tr> <td>(l)</td> <td>Notice Inviting Tender(NIT)</td> </tr> <tr> <td>(m)</td> <td>Request for proposal.(RFP)</td> </tr> <tr> <td>(n)</td> <td>Addendum/ Corrigendum to the Bid.</td> </tr> <tr> <td>(o)</td> <td>Minutes of the Pre-bid conference and addendum issued subsequently Special terms and condition</td> </tr> <tr> <td>(p)</td> <td>General terms of Contract (The printed Tender from)(KMDA from No.I).</td> </tr> <tr> <td>(q)</td> <td>Special Condition of contract(SCC)</td> </tr> </table>	(k)	letter of Intent(L.O.I)/Letter of Acceptance (LOA)	(l)	Notice Inviting Tender(NIT)	(m)	Request for proposal.(RFP)	(n)	Addendum/ Corrigendum to the Bid.	(o)	Minutes of the Pre-bid conference and addendum issued subsequently Special terms and condition	(p)	General terms of Contract (The printed Tender from)(KMDA from No.I).	(q)	Special Condition of contract(SCC)
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		(r) Special terms and condition
		(s) Technical specification.
	1.4	Throughout these Bid Documents, the terms 'bid' and 'tender' and their derivatives (bidder/ tenderer etc.) bid/ tender. bidding/ tendering etc.), are synonymous, & 'Engineer', : 'Independent Engineer' and 'Engineer-in-Charge' are also Synonymous.
	1.5	The rates offered by the tenderers shall be applicable to the whole works and no claim whatever will be entertained on these account.
	1.6	Within the offer rate include the cost of making design and drawing, fabrication design and drawing, temporary supporting structure, erection methodology design and drawing which is required for erection or any other structure required for the construction/erecting of the said work, either themselves or through reputed consultant with the consent of Employer. The names of consultant, with their consent letter with credentials to be furnished to KMDA for approval before taking up the design works. The cost for such shall be included within the offered rate. No extra payment whatever will be entertained on this account.
ENHANCEMENT/ REDUCTION IN CONTACT PRICE	2.0	In no circumstances, the contract Price shall be enhanced/reduced after acceptance of the Tender.
EXPLANATION OF TERMS	3.0	Heading and marginal notes are:. only for convenience of reference and have no contractual Significance.
	3.1	Words importing the singular also includes for the plural and vice-versa where the context so requires.
	3.2	"The words" Approved" or "Direct" appearing anywhere in the tender documents shall indicate (unless specifically mentioned otherwise) the approval or direction of the Engineer –in-charge.
	3.3	The term "At the site of work',' or "Near the site of work "whenever it appears in the tender documents shall mean anywhere within 500 (Five hundred) meters from the actual site of work.
	3.4	The word "Department" appearing anywhere in the tender documents, shall mean "The Employer/Authority i.e. Kolkata Metropolitan Development Authority; (KMDA in abbreviation).
	3.5	The Engineer-in-Charge shall be the Executive Engineer, North Division, R&B Sector, KMDA.
	3.6	The Sub-divisional officer/ Assistant Engineer shall mean the concerned Assistant-in-Charge of the work authorized to carry out on behalf of the Engineer-in-Charge for general supervision, issue of day to day instructions and to approve materials and workmanship.
	3.7	The words "Superintending Engineer" and "Chief Engineer" appearing anywhere in the printed tender form shall mean the concerned Superintending Engineer of the Circle and Chief Engineer of the, Sector (ie. R&B Sector, KMDA) respectively.
MEASURMENT	4.0	All measurements and calculations shall be in the metric system and calculations done to 2 (two) decimal places, with the third digit of 5 (five) or above being rounded up and

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		below 5 (five) being rounded down.
CHARACTER OF SITE	5.0	Before submission of Bids, the intending Bidder shall inspect the site of work, and get them thoroughly, acquainted with the local conditions and difficulties under which the work will have to be carried out. They should consider, among others, the nature of soil, climate conditions of the locality, dearth of water in the area of work, Protective works to be taken during and after the execution of the job, condition of the existing roads, transport facilities, nonexistence of roads in many places etc. Extra cost involved due to above factors to be borne by the contractor and should therefore be included in the rates to be quoted by them.
RIGHT OF WAY	6.0	<p>The site of the Project Elevated Corridor (the “Site”) shall comprise the following in respect of which the Right of Way expected from the Authority to the Contractor prorate basis.</p> <p>(i) Site of the Project Elevated Corridor shall include the land, buildings, road works, RCC & Steel structures and other bridge accessories.</p> <p>(ii) An inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on, or attached to, the Site shall be prepared jointly by the Authority’s Representative and the Contractor.</p> <p>(iii)The proposed alignment is originating from the Metropolitan, over Eastern Metropolitan Bypass. It is aligned over the Captain Bherry parallel to metro viaduct alignment. At the Chingrighata intersection, it is crossing the existing ramp at second level in order to ensure smooth traffic flow at Chingrighata intersection during the construction period.</p> <p>(iv) After Chingrighata intersection, the alignment turns slightly right and follows the Metro Corridor up to Nicco Park, passing over the entry exit ramp structures of the metro stations.</p> <p>(v)After Nicco Park the alignment turns right, it follows the Ring Road up to the Wetland and reaches Mahishbathan (New Town) by crossing over the wetland with all piers in the land banks sections of the Wetland area.</p> <p>(vi) Steel Box Girders have been proposed at important crossings such as Chingrighata and over Entry and Exit ramps of metro stations to optimize the construction time schedule.</p> <p>In the East Kolkata Wetland area, construction must be carried out with minimum interference to the water body thereby without disturbing, changing and modifying the nature and character of the Wetland. All the piers must be situated in the land bank/bund area only.</p> <p style="text-align: center;">Details of additional Up and Down ramps are as follows:</p>

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		<p>a) Down ramp (two lane) near SDF More starting near Ch. 3+856 Km. on main elevated corridor and ending on street no. 18 near junction with street no. 17 (Webel Bus Stop).</p> <p>b) Up Ramp (Two Lane) towards Chingrighata starting near Nalbon Park on Sector V Ring Road and merging into the main elevated corridor near Ch. 4+209.5 Km.</p> <p>c) Up Ramp (Two Lane) towards Chingrighata starting near Nabadiganta Park and merging into the main elevated corridor at Ch. 1+933 Km</p>
INCIDENTAL FEES	7.0	Rate to be quoted by the bidder shall be inclusive of all incidental fees and charges, e.g.' Royalties, Ferry Charges, Octroi and Toll Tax of Materials, Electricity, Water and other charges of Municipalities or Statutory Bodies, Sales Taxes, Income Tax, Cess, GST as applicable time to time etc. Nothing extra will be paid on such accounts.
STATUTORY OBLIGATIONS	8.0	The Contractor shall give all notices and pay all fees required to be given by any statute or any regulation or bye-law of any local or other statutory authority which may be applicable to the Project and shall keep the Employer indemnified against all penalties and liabilities of every kind for breach of such statute, regulation or by law.
	8.1	The Contractor shall indemnify the KMDA against any loss/harm and also against all claims, demands; suite and proceeding on account of infringement of any intellectual property rights or any other protected rights in respect of any constructional plant, machine, work materials, process used in connection with the works or temporary works.
SAFETY PRECAUTIONS	9.0	All necessary precautions, as required under the labour laws and also otherwise, are to be 'taken by the contractor for the safety of his workmen and of the general public. The work must be done in such a way as not to damage any property, existing structure or public utility service during work, Close co-operation must be ensured with other contractor or contractors 'working_ in the area of the project. All claims arising out of any damage to the existing structures or properties due to works of the contractor shall be borne by the contractor.
	9.1	The Contractor shall provide necessary fencing and lighting arrangements around the trench excavated by him and / or at the site of work for the safety of his workmen and of the general Public. Such arrangement shall not be paid for separately and the cost there of shall be included in the Contractor's rate for the work.
IDLE LABOUR	10.0	Whatever be the reason no claim for idle labour, additional cost of establishment, hire and labour charges for tools and plants will be entertained.
		The contractor shall arrange all transport including Railway Wagons required for carriage of all tools and plants, equipment's

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TRANSPORT	11.0	and materials etc. at their own risk and cost. The contractor shall make its own arrangements of vehicle for transporting departmental personnel to visit and inspection of site from the nearest prominent traffic points or railway station.at his own cost as and when necessary.
PUMPING, DEWATERING ETC.	12.0 13.0	The contractor shall provide all pumping and other arrangements that may be necessary to remove from or keep out of foundations, trenches or any part of the structure under construction, water free (whether canal water, sub-soil water and water from sources, whatever). Such pumping or other necessary arrangements shall not be paid separately and the cost thereof is to be included in the contractor's rate.
WATER AND-ELECTRICITY	14.0	The Contractor shall have to make his own arrangement for adequate supply of water and for Electrical power that may be required for or in Connection with execution of the work /Project. All these will have to be done at Contractors own cost and expense and no separate payment for any of these shall be made. The cost there of being deemed to be included in the Contract Price for the Project.
	14.1	Arrangements for supply of piped water from existing service lines may not be possible. In that case the 'Contractor will have to make arrangements for supply of drinking water, and all water required for execution of the work by sinking tube wells- or other suitable alternatives that may be approved by the Engineer-in-Charge. Nothing extra will be paid for such account.
	14.2	Electrical power usual supply agencies may not be available. In that case the Contractor will have to make his own-arrangement for electrical power through generator. Nothing extra will be paid for such account.
CLEARANCE OF SITE	15.0	Before starting any work, the work site where necessary, must be properly dressed after cutting, cleaning and clearing all varieties of jungles and shrubs including bamboo, clusters or any desirable vegetation, rubbish, sludge etc. from the site of works, for which nothing will be paid extra.
	15.1	The site must be clean by the contractor from time to time in the course of execution of the work/ Project.
	15.2	On completion of Construction Work, all temporary works shall be removed by the Contractor. All scars of construction shall be obliterated and the whole site left in a clean and workman like manner, to the entire satisfaction of the Engineer-in- Charge. No separate payment shall be made for these, the cost thereof being deemed to have been included in the Contractor's Contract Price.
SERVICEABLE MATERIALS	16.0	All serviceable materials obtained from excavations or from dismantling of existing structure shall remain the property of the Employer. The responsibility for stacking materials as are considered. Serviceable by the Engineer-in-Charge and handing over the same to the Engineer-in-Charge shall lie fully with the Contractor and nothing will be paid on this account. In case of any loss 'or damage of serviceable materials prior to handing over the same as aforesaid full value thereof will be recovered from the Contractor's bill at rates as assessed by the Engineer-in-Charge.
UNSERVICEABLE	17.0	The contractor shall remove all unserviceable materials to the

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MATERIALS		place acceptable by the local body/ Authority and as per instruction of the EIC or his representative. He should level and dress the work site on completion of the relevant portion of the work as per direction of the Engineer- in-Charge of work. No extra payment will be made on this account.
QUALITY OF MATERIALS	18.0	All materials brought to the site must be to the approval of the Engineer-in-Charge .Rejected materials must be removed by the Contractor from the site within 24 hours of the issue of orders to that effect. In case of non-compliance with such orders, the Engineer.-in-Charge shall have the authority to cause removal at the cost and expense of the Contractor and the Contractor shall not be entitled to claim any loss or damage on that account.
MATERIALS AND LABOUR	19.0	All materials and labour (skilled & unskilled) including their water supply, sanitation, Procurement of food stuff, medical aid etc. is to be arranged by the Contractor. Cost of transport of materials and labour and allied items aforesaid shall have to be borne by the contractor included in his Contract Price
CONTRACTOR'S AUTHORISED REPRESENTATIVE AND TECHNICAL PERSONNEL	20.0	The contractor shall appoint an authorized representative and deploy requisite technical personnel as per minimum requirements provided in the Bidding document to complete of the work/project within the stipulated time period. The minimum qualification of the for the works is experienced Diploma Engineer or Bachelor degree Engineer.
	20.1	The selection of the authorized representative is subject to the prior approval of the Engineer-in-Charge and the contractor shall seek in writing such approval giving therein the name and address of the representative he wants to appoint and the specific purpose for which the representative, will be authorized for. Even after first approval the Engineer- in-Charge may issue at any subsequent date, revised directions about such authorized representative and the contractor shall be bound to abide by such directions. 'The Engineer-in-Charge shall not be bound to assign any reason for any of his directions with regard to the appointment of authorized representative.,
	20.2	The provisions of power of Attorney, if any, must be to the approval of the Employer; otherwise the Employer shall not be bound to take cognizance of such power of Attorney.
SITE OFFICE FOR ENGINEER/ EMPLOYER AND OTHER SUPERVISORY STAFF	21.0	<p>The contractor shall have an office adjacent to the work site as may be approved by the engineer-in-Charge, where all direction and notice any kind whatever, which the Engineer-in-charge, or his repetitive may desired to give to the contractor in connection with the project may be left and the same when left at or send by post to such office or delivered to contractor's authorized agent or reprehensive shall be deemed to be sufficiently served upon the contractor.</p> <p>The contractor shall provide office accommodation at his own cost for exclusive use of the Employer/Engineer-in-Charge. At/ near the site of construction works. The office accommodation should be in the form of a room of minimum 250 sqf, Carpet area with a provision for sitting for minimum of for 4 persons. The room shall be provided with suitable furniture like Chairs, Table, lights, fans and shall also have provision for storage to</p>

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		the extent of two standard size filling self almirahs, This in office accommodation shall be provided along with commencement of construction works
GODOWN, LABOUR SHED ETC.	22.0	The contractor shall make his own arrangements for storages space and Godown for his tools and plants, materials and shall also erect at his own cost The sheds and Godown of adequate capacity at the site of work for proper safety of materials such as cement, steel materials etc. The shed and Godown shall be readily accessible and be opened to inspection to any officer of the employer related to this work at any time during precedence of the contractor.
	22.1	The Contractor shall arrange for temporary sheds, latrines, water supply(drinking Water) etc. for the accommodation and use of his staff. These shall be properly maintained all through the period of construction in clean and hygienic condition to the satisfaction of the Engineer-in-Charge.
	22.2	The locations of Go down, stacking place other temporary structure must be to the prior approval of Engineer-in-charge. If Employer's land is available within the site that will be given free of rent for purpose of temporary structure only, whatever, at the discretion of Employer . Any land outside the worksite as may be required for the purpose will have to be arranged by the Contractor himself at his own cost.
	22.3	On completion of the Construction Works, all sheds, Go down, vats, platform etc. erected by the Contractor for constructional purpose, shall have to be removed by him at his own cost and the ground restored to its original condition to the satisfaction of the Engineer-in-Charge.
SITE ORDER BOOK	23.0	The contractor shall within 7 (seven) days of the receipt of the order to take up Construction Works, supply at his own cost SITE ORDER BOOK to Engineer-in-Charge representative. The site order book shall be kept at the site of Works under the custody of the Engineer-in-Charge representative. The site order book shall have machine numbered pages in triplicate. Directions or instructions from or his authorized or his authorized Employer's officials/ Engineer In-Charge issued to the contractor will be entered (in triplicate) in the site order book (except when such directions or instructions are will are given by separate letters). The contractor or his authorized representative shall regularly note the entries in the site order book and also record there on the action taken or being taken by him complying with the said directions or instructions or any relevant point relating to the work. Contractor or his authorized representative may take away the duplicate page of the work order book for his own record.
	23.1	The first page of the work order book shall contain the following particulars: a) Name of the Work b) Reference to contact no. c) Date of opening the site order book. d) Name and Address of the Contractor (with phone no. if any). e) Signature of the Contractor. Name and Address of the authorized representative who is authorized to act on behalf of the Contractor

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		<p>g) Specific purposes for which the contractor's representative is authorized to act on behalf of the contractor</p> <p>h) Signature of the authorized representative duly attested by the contractor.</p> <p>i) Signature of the Assistant Engineer concerned. Date of written order to commence work.</p> <p>k) Time of completion of work with date</p> <p>l) Extension of time granted, if any.</p> <p>m) Date of actual completion of works</p> <p>n) Date of recording of final measurements.</p> <p>Entries vide (m) & (n) above shall be filled in on completion of work and before the site order book is submitted in the office of the Engineer-in-Charge or his authorized representative.</p>
EXTENSION OF TIME	24.0	Extension of Time may be granted by the Engineer-in charge/ Employer, solely at their discretion as per the Provisions of Clause 12 of the Printed Tender Form - I of KMDA.
WORK PROGRAMME	25.0	The Contractor, on receipt of the Letter of Acceptance shall submit to the Employer /Engineer-in-Charge the work programme in the form of CPM Network chart and/or in Bar Chart, each in duplicate for the approval within 10 (ten) days.
	25.1	The work must be taken up within 7(seven) days from the date of issue Written order to commence work and be completed in all respects within the specified time of completion as mentioned in the tender agreement.
	25.2	The Contractor shall submit the work programmes clearly showing the materials, men and equipment's and a time table divided into four equal periods of progress of the work, for the approval of the Engineer-in-Charge who will have authority to make additions, alterations and substitution to such programme in consultation with the Contractor, unless the same is subsequently found impracticable in some or all respect, in the opinion of the Engineer-in -Charge and is modified by him. The stipulations laid down in clause 2 of the condition of contract in the printed tender form of KMDA(from no.1) regarding the division and progress as provided in the said clause, shall be deemed to have been sufficiently complied with if the actual progress of work does not fall short of the progress as laid down in the approved time table for one-fourth, half and three fourth of the time allowed for the work. The work programme shall be submitted in the form of CPM Network-chart and/ or in Bar Chart each in duplicate.
SETTING OUT OF WORKS	26.0	<p>The contractor shall be responsible for the true and perfect setting out of the works and for the correctness of the position, levels, dimensions and alignment of all parts of the work. If at any time during the progress</p> <p>Of the works any error shall appear or arise on the position, levels, dimension or alignment of any parts of the works the contractor on being directed to do so by the Engineer-in-Charge shall at their own expenses rectify such error. to the satisfaction of the Engineer-in-Charge.</p>
	26.1	Any setting out that may be done or checked by the Engineer-in-Charge or his representative or any line or level that may have been given or checked by either of them shall not in any

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		way relieve the contractor of his responsibility for- the correctness thereof.
	26.2	Before starting the work, the Contractor must at his own cost and expense, erect temporary pillars as may be required in suitable places as directed by the Engineer-in-Charge~ These pillars from which the layout of all important levels and alignment will be fixed, must be at such locations and of such a nature as not to be disturbed in the process of the Construction, The Contractor shall provide all instruments, appliances and labour required for setting out of the works and for the use of the Engineer-in-Charge and /or his authorized representative whenever required for any purpose in connection with the works.
WORKING DRAWINGS	27.0	It is to be clearly understood that drawings forming a part of the Tender documents, are only for the purpose of indicating the type and nature of work involved. These are subject to be subsequently modified and/ or supplemented by other drawings, as required during actual execution of the work.
	27.1	<p>All works shall be carried out in conformity with drawings prepared by the Contractor (based on drawings forming a part of Bidding documents) and approved by the Engineer in charge. The Drawings provided in the Bidding Documents are to act as Guidelines for preparation of Detailed Designs and Drawings by the Contractor, as per Provisions of Condition 1.5 above. The Contractor shall seek and obtain approvals for the Designs and Drawings and in token of such approval, the drawings shall bear the Signature of the Superintending Engineer, Engineer-in-Charge before the same are put to use for execution of the work in accordance there with. Such approval on drawings may be furnished on piecemeal as and when required during the progress of the work. The Contractor shall keep in touch with the Engineer- in-Charge about the drawings that may be under checking or in the process of approval and keep him informed well in advance of the particular drawing and drawings he would next require for the smooth progress of work.</p> <p>For obtaining approval of design & drawing by the Employer, contractor has to submit design calculation and crosses ponding drawing for vetting from educational Institutions like any IIT in India. The fabrication design and drawing, temporary supporting structure, erection methodology design and drawing which is required for erection or any other structure required for the construction/erecting of the said work, contractor has to submit design calculation and corresponding drawing vetting from educational Institutions like any IIT in India, or reputed design consultancy company approved from the Employer (as selected by the employer). All such drawing above shall be vetted by the Engineer-in-charge. Contractor will remain bound to incorporate the observation/ correction/ addition as the case may be as advised by the Engineer in-charge. There after incorporating necessary correction in both design calculation and drawing, the same shall be placed before the Competent Authority of the Employer by the Engineer-in-charge with requisite nos. of copies for obtaining approval from competent</p>

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		authority. Cost for vetting by the Educational Institutions/ reputed design consultancy company of Employer as selected by the Employer will be borne by the Authority/Employer and the cost of the required number of copies during the entire vetting process are to be borne by the contractor.
	27.2	All structural drawing prepared by the contractor and to be submitted in triplicate well in advance to complete the work within the stipulated time period. Drawing will be then checked and approved by the Engineer in charge. One set of commented drawing will then be sent to the Contractor for submission of 5 (five) sets of be drawing incorporating the comments for approval of the same by the Department/ Division. Such approval shall not relieve the contractor of their responsibilities for the correctness thereof. These will be related as incidental to the work. No separate payment shall be made for such work. No fabrication works can be taken up without the approved drawings. The entire fabrication of structural works at work shop / field and erection at site as per approved drawing will be supervised by Engineer in charge. If in opinion of the Engineer In charge, certification of the works is required from a competent agency, the same shall be arranged by the Contractor at his own expense. In such a case, Payment on this item will be released only after receipt of necessary certification from a recognized/ specialized competent agency, through the Engineer In charge. ,
	27.3	Contractor shall furnish in triplicate, the detailed design and drawings of the POT bearing based on the load data provided in the drawings from the manufacture / vendor with a specific certificate of , guarantee. The design and drawing will be then checked by the engineer-in-charge. One receipt of the one copy each of such commended drawings vetted by the engineer in charge, a set of 5(five) copies each of the drawings incorporated the comments are to be submitted to the engineer in charge for the approval of the same by the department or division. Such approval shall not relieve the contractor of their responsibilities for the correctness thereof. These will be related as incidental to the work. No separate payment shall be made for such works.
	27.4	Contractor shall furnish in triplicate the detailed design and drawings of the Strip Seal Expansion Joint based on the information provided in the drawing from the manufacturer / vendor with a specific certificate of guarantee. The design and drawing will then be checked by the Engineer In charge. On receipt of one copy each of such commented drawings vetted by the Engineer In charge, a set of 5 (five) copies each of the drawing incorporating the comments are to be submitted to the Engineer-in-Charge for approval of the same by the Department. Such approval of their shall not relieve the contractor responsibilities for the correctness thereof. These will be related as incidental to the work. No separate payment shall be made for such work.
	27.5	Contractor shall furnish in triplicate the detailed design and drawings of the Reinforced Earth Retaining wall based on the information provided in the drawing from the Specialized Agency with a specific certificate of guarantee. The design and drawing

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		will then be checked by the Engineer in charge. On receipt of one copy each of such commented drawings vetted by the Engineer in charge, a set of 5 (five) copies each of the drawing incorporating the comments are to be submitted to the Engineer-in-Charge for approval of the same by the Department. Such approval shall not relieve the contractor of their responsibilities for the correctness thereof. These will be related as incidental to the work. No separate payment shall be made for such work.
	27.6	All Site Erection program and scheme including temporary staging, design and drawings, and other related items shall be prepared by the contractor and to be submitted in triplicate well in advance to complete the work within the stipulated time period. Drawing will be then checked and approved by the Engineer In charge. One set of commented drawing will then be sent to the contractor for submission of 5 (five) sets of drawing incorporating the comments for approval of the same by the department. Such approval shall not relieve the contractor of their responsibilities for the correctness thereof. These will be related as incidental to the work. No separate payment shall be made for such work and No Erection works can be taken up without having the approved drawings. The entire Erection work will be supervised by the Engineer In charge.
WORKMANSHIP AND TESTING	28.0	All materials and workmanship shall be of the respective kinds described in the contract or as per relevant MORTH/ IRC/IS/ BIS code of practices and shall be subjected from time to time to such tests as code of recommended in the MORTH/ IRC/IS/ BIS practices or as directed by the Charge at Engineer-in-charge at the place of manufacture/ production / fabrication and / or erection /laying at or site of work at all or any such place. The Contractor shall have to provide necessary assistance, instruments, machines, labours and materials as the Engineer-in-Charge examination, measuring and for may require for testing the works and the quality, weight, quantity of the materials used and shall supply samples of testing as may be selected and required by the Engineer-in-Charge.
	28.1	The officials of the Quality Control Division, R&B Sector, KMDA of the Employer may be deputed at site of works for testing of, materials and workmanship, the contractor shall have to extend all necessary help in performing such test. The laboratory charges, if any, to perform such test will have to be borne by the contractor.
	28.2	The Employer, in addition to departmental Quality Control Division may appoint one or more firms institutions for 3rd party inspection and / or testing of materials and/ or workmanship for a whole or part of the job at the place of manufacture / production / fabrication and / or erection / laying at site of work at all or any such place. The contractor shall have to provide necessary assistance in conducting such 3rd party inspection and / or testing and the cost thereof to be borne by the contractor but fees payable to

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		<p>such organization are to be paid by the Employer separately.</p> <p>The result of such test done and produced by the 3rd party shall be binding on the contractor.</p>
<p>QUALITY ASSURANCE, MONITORING</p>	<p>29.0</p>	<p>Quality of Materials and workmanship</p> <p>The Contractor shall ensure that the Construction, Materials and workmanship are in accordance with the requirements specified in this Agreement Specifications and Standards and Good Industry Practice.</p> <p>Quality control system</p> <p>The Contractor shall establish a quality control mechanism to ensure compliance with the provisions of this Agreement (the “Quality Assurance Plan” or “QAP”).</p> <p>Quality Assurance Plan which shall include the following:</p> <p>organization, duties and responsibilities, procedures, inspections and documentation;</p> <p>Quality control mechanism including sampling and testing of Materials, test frequencies, standards, acceptance criteria, testing facilities, reporting, recording and interpretation of test results, approvals, check list for site activities, and proforma for testing and calibration in accordance with the Specifications for Road and Bridge Works issued by MORTH, relevant IRC specifications and Good Industry Practice.</p> <p>The Contractor shall procure all documents, apparatus and instruments, fuel, consumables, water, electricity, labour, Materials, samples, and qualified personnel as are necessary for examining and testing the Project Assets and workmanship in accordance with the Quality Assurance Plan.</p> <p>Inspection of construction records</p> <p>The Authority/employer shall have the right to inspect the records of the Contractor relating to the Works.</p> <p>Inspection</p> <p>The Authority /Employer and its authorized representative shall at all reasonable times have full access to all parts of the Site and to all places from which natural Materials are being obtained for use in the Works; and during production, manufacture and construction at the Site and at the place of production, be entitled to examine, inspect, measure and test the Materials and workmanship and to check the progress of manufacture of Materials.</p> <p>The Contractor shall give the Authority/Employer and its authorized agents access, facilities and safety equipment .</p> <p>Rejection</p>

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		<p>If, as a result of an examination, inspection, measurement or testing, any Plant, Materials, design or workmanship is found to be defective or otherwise not in accordance with the provisions of this Agreement, the Authority/Employer shall reject the Plant, Materials, design or workmanship by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the Defect and ensure that the rejected item complies with the requirements.</p> <p>If the Authority's Engineer requires the Plant, Materials, design or workmanship to be retested, the tests shall be repeated under the same terms and conditions, as applicable in each case. If the rejection and retesting cause the Authority to incur any additional costs, such cost shall be recoverable by the Authority from the Contractor; and may be deducted by the Authority from any monies due to be paid to the Contractor.</p>
CO-OPERATION AND COORDINATION WITH OTHER CONTRACTORS	30.0	During the pendency of this contract, the Employer shall have the liberty to engage a number of contractors for ancillary works (not provided in this contract) for completion of any part of the job and the Contractor shall extend cooperation to other Contractors.
TOOLS AND PLANT	31.0	The Contractor shall install adequate number of tools and plant to execute the work within the stipulated period.
		Before the starting of related item of works as per work programme submitted by the contractor and approved by the department, mobilization and installation of requisite plants shall have to be completed by the contractor at his own cost failing which the contract will be liable to termination with forfeiture of the amount of security deposited Lying with the Employer.
	31.1	The contractor shall have to install all the necessary tools and plants 'including RMC, PLANT, HOT MIX PLANT etc; at the land to be arranged by him at his own cost and shall have to provide the necessary approach road from the plant site to the site of work at his own cost.
MAINTENANCE	32.0	The contractor has to include the costs of maintenance for five years after completion, in his quoted rate inclusive all taxes. The contractor has to perform the maintenance works as per enclosed maintenance manual.
DEFECT LIABILITY PERIOD	33.0	The Defect Liability Period for the work is 5 (Five) year from the actual date of completion of the work. The Contractor shall stand guarantee for the works done by him for a period of 24(twenty four) months from the date of completion of the Construction. Any defects and short comings due to defective construction with in the defect liability period shall have to be made good by the Contractor at his own cost and expense inclusive of all cost of materials and labours. The Contractor shall have to make good the damages due to natural wear and tear at his own cost and expense inclusive of all cost of materials and labour. The Contractor shall have to operate &

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		maintain the work for a period of 60 months. The rate to be quoted by the contractor shall be inclusive of all such costs.
RELEASE OF SECURITY DEPOSIT	34.0	<p>a) No security deposit shall be refunded to the contractor for first 3 (three) year from the actual date of completion of the work.</p> <p>b) 30% of the security deposit shall be refunded to the contractor on expiry of 4 (Four) years from the actual date of completion of the work.</p> <p>c) The balance 70% of the security deposit shall be refunded to the contractor on expiry of 5 (five) years from the actual date of completion of the work.</p>
PROTECTION OF UNDERGROUND UTILITY LINES	35.0	<p>The Contractor at their own cost shall properly sling, support and effectively protect all such gas, water mains, sewerage, drainage and other service Pipes, gully pits, connection pipes, house drains, electric, telephones/ mobile phone service and other cables including their appurtenance structure falling within the alignment of shallow/ deep foundation within the alignment of the structures or likely to be exposed, disturbed or damaged during the execution of the work or in consequence thereof, in such a manner and as such materials as required or specified by the concerned public utility agencies and as per instruction of Engineer in-Charge hold them in proper position without any damage being caused to them during execution of work. The contractor shall have to bear the expenses of pipes, gas mains / gully pit connections / house drains and other electric telephones and other cables or any other underground structures or services falling within the shallow / deep foundation and within the alignment of the structure which may be found to have been disturbed or damaged due to the contractor's fault and / or due to defective and careless workmanship. All such damage/defect shall be rectified by the contractor at his own cost. KMDA will not bear any cost in this regard.</p> <p>If the damage/defect as mentioned above is not restored by the concerned Agency then the Engineer-in charge shall have the right to get the damage /defect restored by engaging separate agency and all the cost in this regard shall be borne by the original (bridge) agency. The decision of the Engineer-in-Charge (EIC) in this respect shall be final & binding and all costs to rebuild or repair such damaged services or structures as aforesaid shall be deducted from the Contractor's bill.</p> <p>The foregoing will not absolve the Contractor of his responsibility. The Contractor should include in his rates the cost of works to be one in properly aligning supporting and adequately protecting of all underground services, structures and utilities. If the EIC thinks it necessary to put permanent supports under Gas / Water mains cables etc. he will order the contractor to do so and the work will be paid for according to the tendered rates.</p>

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		<p>The Contractor shall enquire of and collect information from all concerned public utility organizations, various Govt. Departments and local bodies as to the pipes, water mains, cables and any other obstruction either overhead or on ground or underground which may be encountered in the course of execution of the work and which are likely to affect the progress of the work, at his own cost and risk. No plea of idle labour will be entertained.</p> <p>The contractor has to carry out trial trenching (size will be decided as per site condition and to the satisfaction of the Engineer-in-Charge) for exploration of underground utilities as required and as instructed by the Engineer-in-Charge before commencement of any work below ground level. Consideration for the assumption of such responsibility shall be deemed to have been included in the rates of the relevant items entered in the Bill of Quantities (provided by the Contractor/ bidder) and no additional payment or compensation will be admissible.</p> <p>Apart from the foregoing, there might be requirement of shifting of utilities (Water Supply lines, drainage and sewerage lines, telephone/ cellphone cables, pileons and lines, electric supply lines and infrastructure, gas supply lines etc). In case the Engineer in charge assesses it necessary towards shifting of a certain utility (ies), the same shall be coordinated to the Contractor. The bidder shall have the sole liability regarding payment of cost towards shifting of utilities. However, KMDA will provide administrative support and issue authorization letter after validation of the demand raised by the respective departments/ service providers with respect to utility shifting. Cost involved on this account shall have to be reimbursed by the KMDA separately to the agency after production and consequent scrutiny of valid original payment receipt, apart from tender amount. However, the bidder shall not be entitled to any kind of compensation for delay in reimbursement.</p>
FALLING OF TREES	36.0	<p>The Authority shall assist the Contractor in obtaining the Applicable Permits for felling of trees in non-forest area to be identified by the Authority for this purpose if, and only if, such trees cause a Material Adverse Effect on the construction or maintenance of the Project Elevated Corridor. The Contractor shall fell these trees as per the Permits obtained. The cost of such felling shall be borne by the Contractor and in the event of any delay in felling thereof for reasons beyond the control of the Contractor; it shall be excused for failure to perform any of its obligations hereunder if such failure is a direct consequence of delay in the felling of trees. The Parties hereto agree that the felled trees shall be deemed to be owned by the Authority and shall be disposed in such manner and subject to such conditions as the Authority may in its sale discretion deem appropriate, For the avoidance of doubt, the Parties agree that if any</p>

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		<p>falling of trees hereunder is in a forest area, the Applicable Permit thereof shall be procured by the agency with due recommendation and authentication from KMDA within the time specified in the Agreement. The Contractor has to execute the compensatory plantation in the land of the authority as per the norms against felling down of trees and no additional cost can thus be claimed for this or felling either.</p>
DISMANTLING AND DISPOSAL OF MATERIAL	37.0	<p>Materials obtained from dismantling / picking up road materials or kerb channel stones etc. shall remain the property of the Employer. The Contractor shall sort out and stack all serviceable materials near the site of works as per instruction of the EIC. He shall also dispose of all unserviceable materials etc. to a place acceptable by the local body/ Authority and as per instruction of the Engineer-in-Charge or the representatives. The Contractor shall remain the custodian of such dismantle serviceable materials till the charge of the same is taken over by Engineer-in-Charge or his representatives. Considering for the assumption of such responsibility shall be deemed to have been included in the rates for the relevant of works and no additional payment or Compensation will be admissible.</p>
DELAY IN SHIFTING PUBLIC UTILITY LINES, NON-AVALABILITY OF SITE ETC. AND DETERMINATION OF TENDER	38.0	<p>If at any time after the commencement of the Construction Works, the work and/ or any part thereof shall remain suspended due to public opposition, non- availability of Site, delay in shifting public utilities etc. within the period of completion of Construction work, the Contractor may, at the discretion of the Engineer In-charge, be granted necessary extension of time in accordance with clause-5 of the printed tender Form-I. But he / they shall have no claim for extra payment or compensation whatsoever on the ground of above delay. If however, the above hindrances are not removed within the scheduled time and the contractor is not agreeable to execute further works on extension of time, the tender may be terminated and the Contractor shall have no claim on account of idle labour, establishment etc. or Compensation whatsoever on account of any profit or advantage which he they might have derived from the execution of the aforesaid work in full or in part.</p>
INSURANCE CLAUSE	39.0	<p>The Contractor is to provide insurance coverage by taking adequate and suitable policy, so as to indemnify the Employer against damage of building property / limb or life of any person which may occur during the execution of the contract. The cost thus involved, is to be included in the rate of the quoted by the contractor. No claims on this for extra payment or compensation shall be entertained.</p>
LIST OF KEY PLANT & EQUIPMENT	40.0	<p>Whereas it is entirely the responsibility of the Contractor to deploy sufficient plant and mechanical equipment to ensure compliance with his obligations under the Contract, the list as stated in the bidding Document is an indicative list of the minimum essential basic holding of plant and mechanical equipment which the Contractor must own or have long term leasing arrangements for.</p>

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LIST OF KEY PERSONNEL	41.0	Whereas it is entirely the responsibility of the Contractor to deploy sufficient key personnel to ensure that the work to be completed within the specific time of completion.
LIST OF DRAWING	42.0	Enclosed in the tender documents.
BORE LOG DATA	43.0	To be Furnished by the successful bidder.
SUPERVISION AND PAYMENT	44.0	<p>The tender accepting authority will be the Superintending Engineer, Circle-I, R&B Sector, KMDA</p> <p>All Civil works will be executed under the supervision of Executive Engineer, Special Construction Division-III, and North Division , R&B Sector, KMDA.</p> <p>All Electrical / Mechanical works will be executed under the supervision of Executive Engineer, Electrical Division-II, E& M Sector, KMDA.</p> <p>All Design & drawings related to civil works will have to be got approved by the Superintending Engineer, Circle-I, R&B Sector, KMDA. The measurement of civil works will be recorded by concerned division office of R&B Sector, KMDA</p> <p>All correspondence, approval of design & drawing related to Electro-Mechanical works including factory visit of elevators, Escalators, Generator, pump & motors will be done by the concerned Superintending Engineer, Electrical circle-I,E&M Sector, KMDA and Executive Engineer, Electrical Division-II, E& M Sector, KMDA. The measurement of Electro-Mechanical works will be recorded by concerned division office of E&M Sector, KMDA.</p> <p>However, the financial abstract of all R/A bills as well as final bill will be prepared and settled by the R&B Sector, KMDA.</p>
PAYMENT TERMS	45.0	A bill shall be submitted by contractor that maybe agreed with KMDA on or before the date fixed by Engineer- in Charge for all work executed in the previous works and the Engineer in Charge shall check and verify the same. The contractor shall submit all bills on the printed forms to be had from the office of the Engineer -In- Charge. On recommendation of the Engineer - In- Charge/ Independent Engineer engaged by KMDA, R&B Sector shall make arrangement for payment.
RATE OF PROGRESS & LIQUIDATED DAMAGES	46.0	If for any reason, where no extension of time has been granted to the Contractor(as per clause no.12 of printed form no.1 of KMDA or 38 above), the rate of progress of the Works or any Section is at any time, in the opinion of the Engineer In Charge/ Employer, too slow to comply with the Time for Completion as per the Work Program submitted by the Contractor as per clause no.25), the Engineer-In-charge shall so notify the Contractor who shall there upon take such steps as are necessary, subject to the consent of Engineer- In-charge, to expedite progress so as to comply with the Time for Completion

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		<p>of Construction Works.</p> <p>If Construction Works are not completed within the stipulated time or within the Extended Time allowed , the Employer/ Engineer –In-charge shall at his/ their own discretion would be entitled to levy Liquidated Damages as per provisions of Clause 2 of the Conditions of Contract in the Printed Tender Form-I of KMDA.</p> <p>The payment or deduction of such Liquidated Damages shall not relieve the Contractor from his obligations to complete the Works, or from any other of his obligations and liabilities under the contract.</p>
SETTLEMENT OF DISPUTES	47.0	<p>Employer’s Decision:- If a dispute of any kind what’s ever arise between the Employer and the contractor in connection with, or arising out of, the Project or the execution of the Construction Works, whether during the execution of the Works or after their completion and whether before or after repudiation or other termination of the Contract Agreement, including any dispute as to any opinion, instruction, determination, certificate or valuation of the Engineer In charge, the matter in dispute shall, in the first place, be referred in writing to the Engineer In charge, with a copy to the other party. All the disputes will be settled by the Employer with the help of Engineer In charge and Employer's decision will be final and binding to all</p>
	47.1	<p>Dispute Resolution: Courts in Kolkata shall have exclusive jurisdiction over any matter of disputes arising out of this NIT/Tender documents/Agreement. All disputes arising from the provision of the said NIT/Tender documents/Agreement shall come under the jurisdiction of the Courts in Kolkata or any other Competent court of Law.</p>
	47.2	<p>However, it is specifically stated and clarified that if the bidder/ agency has any grievance/ dispute regarding any terms and conditions, clauses of this NIT/RFP or any grievance regarding execution of work, any payment related issues and any and every issues arising out of this NIT/RFP, the bidder/agency shall write to the nodal Executive Engineer (EIC).</p>
EMPLOYER'S RISKS	48.0	<p>(a) The Employer's risks are;</p> <p>i) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,</p> <p>(ii) rebellion, revolution, insurrection, military or usurped power, or civil war,</p> <p>(iii) pressure waves caused by aircraft or other aerial devices traveling at sonic Or supersonic speeds</p> <p>(b) loss or damage due to the use or occupation by the Employer of any Section or part of the Works, except as may be provided for in the Contract,</p> <p>(c) any operation of the forces of nature (insofar as it occurs on the Site) such as earthquakes, tornado, lightning and etc. against which an experienced Contractor could not reasonably</p>

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		have been expected to take precautions.
	48.1	The Contractor shall be under no liability whatsoever in consequence of any of the Employer's risks, whether by way of indemnity or otherwise, for or in respect of: (a) destruction of or damage to the Works (b) destruction of or damage to property, whether of the Employer or third parties, Or (c) injury or loss of life
	48.2	If the Works or any material or Plant on or near or in transit to the Site, or any of the Contractor's - Equipment, sustain destruction or damage by reason of any of the said special risks, the Contractor shall be entitled to payment in accordance with the Contract for any Work duly executed and for any materials or Plant so destroyed or damaged and, so far as may be required by the Engineer In charge or as may be necessary for the completion of the Works for: (a) rectifying any such destruction or damage to the Works, and (b) replacing or rectifying such materials or Contractor's: Equipment and the Engineer In charge shall determine an addition to the Contract price and shall notify the contractor accordingly with a copy of the employer.
	48.3	Projectile , Missile etc.: Destruction, damage, injury or loss of life caused by the explosion or impact, whenever and wherever occurring, of any mine, bomb, shell, grenade, or other projectile, missile, munitions, or explosive of war, shall be deemed to be a consequence of the said Employer' s risks.
	48.4	Increased Costs Arising From Employer's Risks : Save to the extent that the Contractor is entitled to payment under any employer provision of the Contract Agreement, the Employer shall repay to the Contractor any costs of the execution of the Construction Works which are howsoever consequent on or the result of or in any way whatsoever connected with the said Employer risks, subject however to the provisions in this Clause hereinafter contained in regard to outbreak of war, but the Contractor shall, as soon as any such cost comes to his knowledge, forthwith notify the Engineer In charge thereof. The Engineer In charge shall, after due consultation on with the Employer and the Contractor, determine the amount of the Contractor's costs in respect thereof which shall be added to the Contract Price and shall notify the Contractor accordingly, with a copy to the Employer.
	48.5	Outbreak Of War: If, during the currency of the Contract Agreement, there is an outbreak of war whether war is declared or not, in any part of the world which, whether finally or otherwise materially affects the execution of the Construction Works, the Contractor shall, unless and until the Contract is terminated under the provision of this Clause, continue to use his best

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		endeavors to complete the execution of the Construction Works, provided that the Employer shall be entitled, at any time after such outbreak of war, to terminate the Contract Agreement by giving notice to the Contractor and, upon such notice being given, the Contract shall, except as to the rights of the parties under this Clause and terminate, but without prejudice to the rights of either party in respect of any antecedent breach thereof.
	48.6	<u>Removal Of Contractor's Equipment On Termination:</u> If the Contract Agreement is terminated under the provisions of Sub-Clause 48.5, Contractor shall, with all responsible dispatch, remove from the Site all Contractor's Equipment.
	48.7	<p><u>Payment If Contract Terminated:</u> If the Contract is terminated as aforesaid, the Contractor shall be paid by the Employer, insofar, as such amounts or items have not already been covered by the payments on account made to the Contractor, for all work executed prior to the date of termination at the rates and prices provided in the Priced Bill of Quantities provided by the Contractor, and in addition, the following shall also be considered for payment:</p> <p>(a) The amounts payable in respect of any preliminary items referred to in the Priced Bill of Quantities provided by the Contractor, so far-as the work or service comprised therein has been carried out or performed, and a proper proportion of any such items which have been partially carried out or performed.</p> <p>(b) The cost of materials, Plant or goods reasonably ordered for the Construction Works which have been delivered to the Contractor or of which the Contractor is legally liable to accept delivery, such - materials, Plant or goods becoming the-property of the Employer upon such payments being made by him.</p> <p>(c) Any additional sum payable under the provisions of Sub-clauses 48.2 and 48.4 in the tender documents.</p> <p>Provided that against any- payment due from the Employer under this Clause/sub clauses, the Employer shall be entitled to be credited with any outstanding balances due from the Contractor for advances in respect of Contractor's Equipment materials and Plant and any other sums which at the date of termination, were recoverable by the Employer from the Contractor under the terms of the Contract. Any sums payable under this Sub-Clause shall, after due consultation with the Employer and the Contractor, be determined by the Engineer In charge who shall notify the Contractor accordingly, with a copy to the Employer.</p>
RELEASE FROM PERFORMANCE	49.0	<p><u>Payment in Event of Release from Performance:</u></p> <p>If any circumstance outside the control of both parties arises after the issue of the Letter of acceptance which renders it impossible or unlawful for either party to fulfill his Contractual Obligations, or under the law governing the contract agreement, the parties are released from further performance, then the sum payable by the employer to the Contractor 'in respect of the</p>

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		work executed shall be the same as that which would have been payable under Clauses 48 if the contract had been terminated under the Provisions of Clauses 48.
REMEDIES	50.0	<p>Default Of Contractor: If the Contractor is deemed by law unable to pay his debts as they fall due, or enters into voluntary or involuntary bankruptcy, liquidation or dissolution (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or becomes insolvent, or makes arrangement with, or assignment in favour of his creditors, or agrees to carry out the Contract agreement under a committee of inspection of his creditors or if a receiver administrator, trustee; liquidator is appointed over any substantial Part of his assets, or if, under any law or regulation relating to reorganization, arrangement or readjustment of debts, proceedings are commenced against the contractor or resolutions passed in connection with dissolution or liquefaction or if any steps are taken to enforce any security interest over a substantial part of the assets of the Contractor or if any act is done or event occurs with respect to the Contractor or his assists which, under any applicable law has a substantially similar effect to any of the foregoing acts or events, or has an execution levied on his goods, or if the Engineer in charge certifies to the Employer, with a copy to the Contractor, that in his opinion, the Contractor:</p> <p>(a) has repudiated the Contract Agreement, or (b) without reasonable excuse has failed i) to commence the Works in accordance with Sub clauses 25.1 or ii) to proceed with the Works, any Section thereof within 28 days after receiving notice pursuant to Sub-Clause 46.</p> <p>(c) has failed to comply with a notice issued pursuant to Clause 18, and / or requirement of changes/ modifications under clauses 28, or an instruction issued for removal of improper Work, Materials or Plant within the 'stipulated period after having received it or</p> <p>(d) despite previous warning . from the Engineer in charge , in writing is otherwise persistently or , flagrantly neglecting to comply with : any obligations under the Contract Agreement,</p> <p>then the Employer may, after giving 14 days' notice to the Contractor, enter upon the Site and Works and terminate the employment of the Contractor without thereby avoiding the Contract Agreement, or releasing the Contractor from of his obligation or liabilities under the Contract, or affecting the rights and authorities conferred on the Employer or the Engineer in charge by the Contract Agreement and may himself complete the Works or may employ any other Contractor to Complete the Project. The Employer or such other Contractor may use for such completion so much of the</p>

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		<p>Contractor's Equipment, Temporary Works and materials as he or they may think proper and the Employer may, at any time, sell any of the said Contractor's Equipment, Temporary Works and unused Plant and Materials and apply the proceeds of sale in or towards the satisfaction of any sums due or which may become due to Contractor from the construction under the Contract Agreement.</p> <p>In case the work, is left by the Contractor in between the Contract period, the Employer has full right to forfeit his Security Deposit and his all other due payments. The balance work shall be got done at the risk and cost of the Contractor.</p>
	50.1	<p><u>Valuation at date of Termination:</u> The Engineer in charge shall, as soon as may be practicable after any such entry and termination by the Employer, fix and determine ex-parte, or by or after reference to the parties or after such investigation or inquiries as he may think fit to make or institute and shall certify:</p> <p>(a) what amount (if any) had, at the time of such entry and termination, been reasonably earned by or would reasonably , accrue to the Contractor in respect of work then actually done by him under the Contract Agreement and</p> <p>(b) the value of any of the said unused or Partially used materials, any contractor' s Equipment and any Temporary Works.</p>
	50.2	<p><u>Payment After Termination:</u> If the Employer terminates the Contractor' s employment under this Clause of Remedies, he shall not be liable to pay to the Contractor any further amount (including damages) in respect of the Contract until the expiration of the Defects Liability Period and thereafter until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any) and all other expenses incurred by the Employer have been ascertained the amount thereof certified by the Engineer In charge. The Contractor shall then be entitled to receive only such sum (if any) as the Engineer In charge may certify would have been payable to him upon due completion by him after deducting the said amount. If such amount exceeds the sum which would have been payable to the Contractor on due completion by him, then the Contractor shall, upon demand, pay to the Employer the amount of such excess and it shall be deemed pay debt due by the Contractor to the Employer and shall be recoverable accordingly.</p>
	50.3	<p><u>Assignment Of Benefit Of Contract Agreement:</u> Unless prohibited by law, the Contractor shall if so instructed by the Engineer In charge within 14 days of such entry and termination referred to in Sub-Clause, assign to the Employer the benefit of any agreement for the supply of any goods or materials or services and/or for then execution of any work for the purpose of the Contract, which the Contractor may have entered into.</p>

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	50.4	<u>Urgent Remedial Work:</u> If, by reason of any accident, or failure, or other event occurring to, or connection with the Construction Works, or any part thereof, either during the execution of the works, or during the Defects Liability Period, any remedial or other work is, in the opinion of the Engineer In charge, urgently necessary for the safety or progress of the work and the Contractor is unable or unwilling at once to do such work, the Employer shall be entitled to employ and Pay Other person to carry- out such work as the Engineer In charge may consider necessary. If the work or repair so done by the Employer is work which, in the Opinion of the Engineer in charge, the Contractor was liable to do at his own cost under the Contract Agreement, then all costs consequent thereon or incidental thereto shall, after due consultation with the Employer and the Contractor be determined by the Engineer in charge and shall be recoverable the contractor accordingly, with a copy to the Employer provided that the Engineer in charge shall, as soon after the occurrence of such emergency as may be reasonable practicable, notify the Contractor thereof.
	50.5	<u>Right of Employer to determine the contract Agreement:</u> The Employer shall be entitled to determine and terminate the contract Agreement at any time should, in the Employers opinion, the cessation of work becomes necessary owing to the paucity of funds or from, any other cause, whatsoever, in which case the value of approved materials at site and work done till date by the Contractor will be paid for in full at the rate specified in the contract. Notice in writing from the Employer of such determination and the reason therefore shall be conclusive evidence thereof. Should the Contract Agreement be determined under above clause or due to any other reason, the Contractor shall have no claim to any. payment of compensation or otherwise however on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of determination of the contract. No compensation' of any kind relating to unexecuted work e.g expected profit overheads, mobilization expenditure etc. will be payable.
LAW	51.0	The country, the law of which shall apply to the Contract and according to which the Contract shall be construed is in India. For any dispute the jurisdiction of the court shall be the Kolkata Calcutta High Court.
REPRESENTATION & WARRANTIES.	52.0	<u>Mutual Representations & Warranties:</u> Notwithstanding anything to the contrary and in addition to and not in derogation of their respective obligations set out elsewhere in this Contract Agreement each Party represents and warrants to the other Party that:
		It is duly organized, validly existing and in good standing under the laws of India. Towards the same the Selected Bidder/ Consortium/ JV shall either be an existing Company incorporated under the Indian Companies Act 1956, or shall

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		incorporate itself as such prior to execution of the Contract Agreement with the Employer.
		It has full power and authority to execute; deliver and perform its obligations under the Contract Agreement.
		it has taken all necessary action to authorize the execution delivery and performance of its obligations under the Contract Agreement and to carry out the transactions contemplated hereby.
		The Contract Agreement constitutes its legal, valid and binding obligation; fully enforceable against it in accordance with the terms hereof.
		It has an obligation to disclose to the other Party, as and when, an of its representations and warranties ceases to be true and valid.
	52.1	Further Representations and Selected Bidder/ Contractor: Notwithstanding anything to the contrary and in addition to and not in derogation of their respective obligations/ representations & warranties set out elsewhere in Warranties of the Notwithstanding the Contract Agreement,, the Contractor represents and warrants to the Employer that:
	52.1.1	The execution, delivery and performance of the Contract Agreement/ Project and all instruments or agreements required hereunder do not conflict with, contravene, violate, result in the breach of under or accelerate constitute a default performance of any agreement or instrument to which the Contractor is a party, including without limitation, its Articles and Memorandum of Association or by which it is or may be bound or any Applicable Laws or any covenant, agreement, understanding, decree or order, injunction, award to which it is a party or by which it or any of its properties or assets is bound or affected
	52.1.2	There are no actions, suits, proceedings, or investigations pending or, to the Contractor's knowledge, threatened against it at law or in equity before any court or before any other judicial, quasi judicial or other authority, the outcome of which may result in the breach of or constitute a default of the Contractor under the Contract Agreement or which, individually or in the aggregate, may result in any Material Adverse Effect" means circumstances which may or do (i) render any right vested in a Party by the terms of the Contract Agreement ineffective; or (ii) adversely affect or restrict or frustrate the ability of any Party to observe and perform in a timely manner its obligations under the Contract Agreement or; (iii) which may adversely affect the legality, validity, binding nature or enforceability of the Contract Agreement.
	52.1.3	It has no knowledge of any violation or default with respect to any order, writ, injunction or any decree of any court or any legally binding order of any Government Authority or any other pending or potential matters which may result in any Material Adverse Effect or impairment of the Contractor's ability to perform its obligations and duties under the Contract Agreement
	52.1.4	It has complied with all Applicable Laws and has not been subject to any fines, penalties, injunctive relief or any other civil

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		or criminal liabilities. which individually or in the aggregate have or may have Material Adverse Effect
	52.1.5	NO representation or warranty by it, contained herein or in any other document furnished by it to the Employer or to any Government Authority in relation to Applicable Permits or otherwise, Contains or will contain any untrue statement of material fact or omits or will omit to state a to make such material fact necessary representation or warranty not misleading.
	52.1.6	Each member of the Consortium was and is duly organized and existing under the laws of the jurisdiction of its incorporation and has full power and authority to consent to and has consented to the Contractor entering into this Agreement and has agreed to and unconditionally accepted the terms and conditions set forth in the Contract Agreement; Provided that whenever any pending or potential matter, including the matters listed in the sub articles above, comes to the knowledge of the Contractor, during the execution of Construction Works and/ or during the Defects Liability Period, the outcome of which may or reasonably be perceived to result in the breach of or constitute a default of the Contractor under this Agreement or which individually or in the aggregate may result in any Material Adverse Effect or impairment of the Contractor's ability to perform its obligations and duties under this Contract Agreement, the Contractor shall immediately intimate the same to the employer.
	52.1.7	In submitting its Proposal the Selected Bidder has complied with all the Applicable Laws and it is and has not been subject to any fines, penalties, injunctive relief or any other civil or criminal proceedings or liabilities which individually or in the aggregate have or may have Material Adverse Effect on its financial condition or its ability to the implement of the project.
	52.1.8	All rights and interests of the Contractor in the Project, the Project Facilities and Project Assets shall pass to and vest in the Employer on the date of completion of the Defects Liability period free and clear of all liens, claims, and Encumbrances, without any further act or deed on the part of the Contractor or the Employer and that none of Project Assets, including materials, supplies equipment forming part thereof, shall be acquired by the Contractor subject to any agreement under other lien or which a Security Interest or encumbrance is retained by any person, save and except as expressly provided in the Contract Agreement.
	52.1.9	No sums, in cash or kind, have been paid or will be paid by or on behalf of the Contractor, to any person by way of commission or otherwise for securing the award of this Project, execution of the or for influencing, or Contract Agreement attempting to influence any officer or employee of the Employer or its Transaction Advisors.
	52.1.10	It has the financial standing and capacity to undertake the project.
	53.2	Waiver of Sovereign Immunity: Each Party hereto,

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		unconditional and irrevocably.
	53.2.1	Agrees that the execution, delivery and performance of its respective obligations under the Contract Agreement and all other agreements, contracts, documents and writings relating to the Contract Agreement constitute acts that are subject to the scrutiny and jurisdiction of any or all the civil and commercial laws of India, applicable with respect to the Contract Agreement.
	53.2.2	agrees that in the event any proceedings be brought against it or its assets, other than the assets protected by the diplomatic and consular Foreign Sovereign under the privileges Immunities Act or / any analogous legislation (referred to as the Exempted Assets), in any jurisdiction, in relation to the Contract Agreement or any transaction contemplated by the Contract Agreement, no immunity, sovereign or otherwise from such proceedings, execution, attachment or other legal process, shall be claimed by or on behalf of itself or with respect to any of its asset
	53.2.3	consents, subject to sub-article 53.2.2 above, to the enforcement of any judgment against it in any proceedings in any jurisdiction to the giving of any relief or the issue of any process in connection with such proceedings, including without limitation, the making, enforcement or execution against or in respect of any property, irrespective of its use.
DISCLAIMER	54.0	Without prejudice to any express provision contained in the Contract Agreement, the Selected Bidder/Contractor acknowledges that prior to the date of signing of Contract Agreement, it has after a complete and careful examination, made an independent evaluation of the Project, the legal and contractual framework, the Applicable Laws and terms of the Applicable Permits, the technical and financial aspects of the Project, the Specifications and Standards, the Project Site/ Stretch and the suitability of its condition, soil and location for implementation of the Project, the availability of goods, materials and things needed for implementing Project, all the information' and documents provided by the Employer, its Or any Consultants/ Transaction Advisors Government Authority, traffic scenario/ situation risks, consequences and criticalities involved in implementing the Project, and has determined, to its complete satisfaction, the nature and extent of such difficulties, risks and hazards as are likely to arise or may be faced by the Contractor in the course of performance of its obligations under this Agreement.
	54.1	The Selected Bidder / Contractor further acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth in sub-clause 54.0 above and hereby confirms that the Employer, its consultants/ Transaction Advisors any Government Authority shall not be liable for the whatsoever, to the same, 1n any manner Contractor/ selected Bidder or Persons claiming through or under the Contractor/ Selected Bidder.
	54.2	The Selected Bidder /Contractor accepts that it is solely and exclusively responsible for the verification of any design, data, design, documents or information provided to the Selected Bidder/ Contractor by the Employer, its consultants /

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		Transaction Advisors or any Government Authority and that it shall accept and Act thereon at its own costs and risk.
	54.3	The Selected Bidder /Contractor shall be solely responsible for the contents of its Proposal, adequacy and correctness of the Design and Drawing, data and DPR, prepared or procured by the Contractor, for implementing the Project
	54.4	The Contractor shall enter into the Contract Agreement on the basis of its satisfaction based on the due diligence audit undertaken by it.
TRAFFIC REGULATORY	55.0	<p>Traffic regulation by the Contractor</p> <p>(i) The Contractor shall take all the required measures and make arrangements for the safety of Users during the Construction and Maintenance of the Project Elevated Corridor or a Section thereof in accordance with the provisions of MORTH Specifications. It shall provide, erect and maintain all such barricades, signs, markings, flags, and lights as may be required by Good Industry Practice for the safety of the traffic passing through the Section under construction or maintenance,</p> <p>(iii) All works shall be carried out in a manner creating least interference to traffic passing through the Project Elevated Corridor or a Section thereof. In sections where construction or maintenance Works on the carriageway are taken up, the Contractor shall ensure that proper passage is provided for the traffic. Where it is not possible or safe to allow traffic on part width of the carriageway, a temporary diversion of proper specifications shall be constructed by the Contractor at its own cost. 'ROBOTS'/Traffic volunteers may be used for diversion and control of traffic during Construction. The Contractor shall take prior approval of the Authority's Engineer for any proposed arrangement for traffic regulation during Construction and Maintenance, which approval shall not be unreasonably withheld.</p> <p>(iv) No additional payment could be claimed by the Contractor as the offered rate includes all such allied works to facilitate the construction of elevated corridor.</p>
ADVANCE PAYMENT	56.0	<p>(i) The mobilization advance @ 10% of tendered amount at 10% simple interest may be sanctioned to the contractor On specific request as per term of the contract.</p> <p>(ii) The mobilization advance shall be released only after submission of an unconditional Bank Guarantee from a scheduled bank by the contractor for the amount of advance</p>

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		<p>and interest which will remain valid for the contract period.</p> <p>(iii) The mobilization advance together with interest on the advance shall be recovered from running account bills of the contractor.</p> <p>iv) The Advance Payment shall be recovered from the 5th RA Bill @ 5% or more of the advance amount along with outstanding interest on the said advance. The recovery of entire amount shall be completed within 24 months since date of issuance of the work order.</p>
<p>ESCALATION OR THE PRICE ADJUSTMENT FOR THE WORKS</p>	<p>57.0</p>	<p>The Contract Price shall be adjusted for increase or decrease in rates and price of labour, cement, steel, Plant, machinery and spares, bitumen, fuel and lubricants, and other material inputs in accordance with the principles, procedures and formulae specified below for the construction period (24 months);</p> <p>(a) Price adjustment shall be applied on completion of the specified stage of the respective item of work in accordance with payment schedule.</p> <p>(b) Adjustment for each item of work/stage shall be made separate.</p> <p>(c) The following expressions and meanings are assigned to the value of work done :</p> <p>BR = Value of work done for the completion of a stage under the items Major Bridges</p> <p>(d) Price adjustment for changes in cost shall be paid in accordance with the following formula:</p> $\mathbf{VBR} = 0.85 \text{ BR} \times [\text{PL} \times (\text{L}_I - \text{L}_O) / \text{L}_O + \text{PA} \times (\text{A}_I - \text{A}_O) / \text{A}_O + \text{PF} \times (\text{F}_I - \text{F}_O) / \text{F}_O + \text{PM} \times (\text{M}_I - \text{M}_O) / \text{M}_O + \text{PC} \times (\text{C}_I - \text{C}_O) / \text{C}_O + \text{PS} \times (\text{S}_I - \text{S}_O) / \text{S}_O]$ <p>Where,</p> <p>VRW = Increase or decrease in the cost of road works/other works during the period under consideration due to changes in the rates for relevant components as stated in sub-paragraph (e)</p> <p>VBR = Increase or decrease in the cost of Major Bridges and Structures during the period under consideration due to changes in the rates for relevant components as stated in sub-paragraph (e)</p> <p>PB, PC, PL, PM, and PS are the percentages of bitumen, cement, labour, other materials, and steel/components (including strands and cables) respectively for the relevant item as stated in sub-paragraph (e)</p> <p>PA is the percentage of Plant, machinery and spares component for the relevant item as stated in sub-paragraph (e).</p> <p>PF is the percentage of fuel and lubricants for the relevant items as stated in sub-paragraph (e).</p> <p>A₀ = The wholesale price index as published by the Ministry of Commerce & Industry, Government of India (hereinafter called "WPI") for construction machinery for the month of the Base Date.</p>

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A_I = The WPI for construction machinery for the month three months prior to the month to which the IPC relates.
 B_O = The official retail price of bitumen at the nearest refinery at [Panipat] on the Base Date.
 B_I = The official retail price of bitumen at nearest refinery at [Panipat], on the first day of the month three months prior to the month to which the IPC relates.
 C_O = The WPI for cement for the month of the Base Date.
 C_I = The WPI for cement for the month three months prior to the month to which the IPC relates.
 F_O = The official retail price of high speed diesel (HSD) oil at the existing consumer pumps of Indian Oil Corporation (“IOC”) in the State of [Haryana] on the Base Date.
 F_I = The official retail price of HSD at the existing consumer pumps of IOC in the State of [Haryana] on the first day of the month three months prior to the month to which the IPC relates.
 L_O = The consumer price index for industrial workers for the [circle **** in the State of Uttar Pradesh], published by Labour Bureau, Ministry of Labour, Government of India, (hereinafter called “CPI”) for the month of the Base Date.
 L_I = The CPI for the month three months prior to the month to which the IPC relates.
 M_O = The WPI for all commodities for the month of the Base Date.
 M_I = The WPI for all commodities for the month three months prior to the month to which the IPC relates.
 S_O = The WPI for steel (rods) for the month of the Base Date.
 S_I = The WPI for steel (rods) for the month three months prior to the month to which the IPC relates.

(e)The following percentages shall govern the price adjustment of the Contract Price:

Component	Item				
	Road Works				Major Bridges and Structures
	Earthwork, Granular work	Bituminous work	Cement Concrete	Culverts, minor bridges	
Labour(PL)	[20%	[20%]	[20%]	[15%]	[15%]
Cement(PC)	[5%]	Nil	[20%]	[15%]	[15%]
Steel (PS)	Nil	Nil	Nil	[15%]	[30%]
Bitumen(PB)	Nil	[15%]	Nil	Nil	Nil
Fuel and lubricants (PF)	[10%	[10%]	[10%]	[10%]	[5%]
Other Materials (PM)	[50%	[40%]	[35%]	[30%]	[20%]

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		Plant, machinery and spares. (PA)	[15%	[15%]	[15%]	[15%]	[15%]
		Total	100	100%	100%	100%	100%
		<p>Restrictions on price adjustment</p> <p>Price adjustment shall be due and payable only in respect of the stages of Works for which the Stage Payment Statement has been submitted by the Contractor no later than 30 (thirty) days from the date of the applicable Project Milestone or the Scheduled Completion Date, as the case may be, including any Time Extension granted therefor in accordance with the provisions of this Agreement. For the avoidance of doubt, in the event of submission of any Stage Payment Statement after the period specified herein, price adjustment shall be applicable until the date of the respective Project Milestone or the Scheduled Completion Date, as the case may be.</p> <p>Price adjustment for Maintenance of Project Highway</p> <p>Lump sum payment for Maintenance shall be adjusted every quarter for changes in rates and prices of various inputs in accordance with the formula given below:</p> $V = P \times (W_1 - W_0) / W_0$ <p>V = Increase or decrease in the quarterly lump sum payment P = Quarterly lump sum payment due to the Contractor after adjusting any reduction in payment for non compliance of the Maintenance Requirements W₀ = The wholesale price index (all commodities) for the month of the Base Date. W₁ = The wholesale price index (all commodities) for the first day of the quarter under consideration for determining the price adjustment.</p> <p>N.B. The escalation clause will be valid up to the 18 month from date of issuance of work orders.</p>					
Suspension & Debarment of Contractor	58.0	<p>The detailed procedure for taking penal measures of suspension and debarment of suppliers, contractors and consultants delineated in the memorandum no. 547-W(C)/1M-387/15 dated 16.11.2015 and its subsequent amendment notified vide memorandum no.724-W(C)/1M-953/19 Dated 19.12.2019 of works Branch, PWD, GoWB shall be followed for debarment & suspension of bidders & agencies selected for executing public works for their false declaration or forgery or falsification of records submitted or failure to execute committed contract or for their failure to perform contractual obligations and thereby</p>					

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		<p>resulting delay for execution of public works or Executed of faulty works.</p> <p>All the disputes arising from the provision of the said agreement come under the jurisdiction of Calcutta High Court or any other component court as the case may be as per vide order no.214(Law)/UDMA-15011(99)/107/2023-LC-ud 10th March, 2023.</p>
Penalty	59.0	<p>The Agency will be penalized by imposing delay damages by the authority due to poor progress of work for reason solely attributed to the agency as decided by the competent Authority of KMDA.</p> <p>The contractor shall construct the flyover as per submitted work programme in conformity with the specification and standard. The contractor shall responsible for the correct positioning of all parts of the works and arrange to complete the construction works before the schedule of completion date. In this event that the contractor fails to achieve any project mile stone or the schedule completion date as per submitted work programme, the competent authority shall notify the contractor to impose delay damage and the contactor shall submit the delay damage to the Authority of a sum calculation rate of 0.05%(zero point zero five) of the contract price each day reckoned from the specific date as per submitted work programme. If the delay damage exceeds 10% (ten percent) of the contract price, the contractor shall be in default of this agreement having no cure and the Authority shall be entitled to terminate this Agreement by issuing a Termination Notice. If the schedule completion date extended in accordance with the provision of the bid documents, the dates of the work programme shall be modified as per time extension. Provide further that in the event of the flyover project is completed within or before the schedule date of completion including any time extension application for that work, the damage paid under this clauses shall be refunded by the Authority to the contractor but without any interest there off.</p>
Display Board	60.0	<p>Successful bidder will have to install display board as instructed by Engineer-In-Charge and have to maintain that board at his own cost. No payment shall be made in this regard from KMDA.</p>
GST	61.0	<p>What will happen when GST is induced?</p> <p>The financial proposal shall be Lum Sum basis inclusive of all the taxes. The employer shall not be liable to incur any additional cost towards changes in tax rates and/or any additional impositions unless approved from finance department GoWB. Bidders has to quote taking into consideration all the</p>

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		changes if he feels like so.
Post Construction load test	62.0	<p>A. Assessment of load carrying capacity through load-deflection Characteristics as per IRC SP-37 or IRC SP 51 latest revision by</p> <ol style="list-style-type: none"> 1) Use of LVDT for measuring deflection under specified loads at different parts (sates for 3 point be indicated) 2) Load test at specified location as decided by EIC. 3) Measurement of strains at specified location using electrical resistance strain gauge (set of 3 Nos). <p>OR</p> <p>B. Measurement of Dynamic parameters through accelerometers/Fiber Bragg Grating (FBG) sensors.</p> <ol style="list-style-type: none"> 1) Measurement of acceleration using accelerometers/Fiber Bragg Grating (FBG) sensors (set of 3 Nos). 2) <p>A certification from any reputed institution will be submitted by the agency.</p> <p>The load test will be carried out in two critical locations after completion of the construction works before opening to traffic as decided by EIC.</p>
Miscellaneous	63.0	<ol style="list-style-type: none"> 1. There will be no right of compensation under any circumstances. 2. In case of delay to whom so ever attributable, the contractor/ bidder shall not be entitled to any compensation. 3. The contractor/bidder shall only be entitled to extension of time. The contractor / bidder shall not be entitled to any compensation if any extension is granted. 4. Delay in making payment of bills will not attract any compensation / interest in favour of the contractor /bidder under any circumstances.

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Information about Site of the Project

1. The Site

- (i) Site of the Project Elevated Corridor shall include the land, buildings, road works, RCC & Steel structures and other bridge accessories.
- (ii) An inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on or attached to the Site shall be prepared jointly by the Authority's /Employer's Representative and the Contractor.
- (iii) The alignment plans of the Project Elevated Corridor are specified later clauses. In the case of sections where no modification in the existing alignment of the Project Elevated Corridor is contemplated, the alignment plan has not been provided. Alignment plans have only been given for sections where the existing alignment is proposed to be upgraded. The proposed profile of the Project Corridor shall be followed by the contractor with minimum clear height required from existing road, flyover, Metro railway structure and wet land. The Contractor can, however, improve/upgrade as indicated in the alignment plan. the Elevated Road Profile as indicated based on site/design requirement and following the stipulated clearances with the adjacent areas and structures.

Site

1. Site

The Site of the 4-Lane Project Elevated Corridor of width: 16.5m , length: 5.990 Km (more or less)(excluding all two lane grade separating ramps) commences from Ch. 0+110 Km near Metropolitan Housing Estate, on Eastern Metropolitan Bypass and ends at Ch. 6+100 Km i.e. at the major 6-lane road of Mahishbathan adjacent to CG Block of New Town in the State of West Bengal.

Details of additional Up and Down ramps are as follows:

- i) Down ramp of width 6.5 m and length of 370.76m (more or less)near SDF More starting near Ch. 3+950 Km. on main elevated corridor and ending on street no. 18 near junction with street no. 17 (Webel Bus Stop).
- ii) Up Ramp of width 8.5 m, length 411.16 m (more or less) towards Chingrighata starting near Nalbon Park on Sector V Ring Road and merging into the main elevated corridor near Ch. 4+300 Km.
- iii) Up Ramp (width: 8.5m, Length: 312.89 m (more or less) towards Chingrighata starting near Nabadiganta Park and merging into the main elevated corridor at Ch. 2+100 Km.

The land, carriageway and structures comprising the Site are described below.

2. Land

The Site of the Project Elevated Corridor comprises the land (sum total of land already in possession and land to be possessed) as described below:-

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Sl. no.	Chainage (km)		Length (m)	Existing ROW (m)	Remark
	From	To			
Main Carriageway					
1	0+110	0+460	350	36	No land acquisition is required and entire land is available.
2	0+460	0+729	269	-	Permission from competent environment authority already taken.
3	0+729	0+769	40	-	Land of 13 m width to be acquired.
4	0+769	0+891	122	-	Government land to be taken over by KMDA.
5	0+891	1+318	427	36	No land acquisition is required and entire land is available.
6	1+318	1+502	184	-	Government land to be taken over by KMDA.
7	1+502	2+799	1297	36	No land acquisition is required and entire land is available.
8	2+799	2+910.5	111.5	-	Government land to be taken over by KMDA.
9	2+910.5	3+838.5	928	21	No land acquisition is required and entire land is available.
10	3+838.5	4+173.5	335	-	Government land to be taken over by KMDA.
11	4+173.5	4+525.5	352	-	Government land of 25m width to be taken over. (Nalban Bank) Permission from the competent Environment Authority maybe required.
12	4+525.5	5+773.5	1248	-	Permissions may be obtained from the competent Environment Authority for construction.
13	5+773.5	6+100	326.5	45	No land acquisition is required and entire land is available.
Down Ramp (SDF More)					
1.	0+082.39 7	0+453.1 68	370.7 6(more or less)	5.5	No land acquisition is required and entire land is available.
Up Ramp (Nalbon Park)					
1.	0+96.73	0+369. 62	312.89(more or Less)	8.5	The Ramp is aligned over the Nalban Park and will be taken over by KMDA.
Up Ramp (Nabadiganta Park)					

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1.	0+411.1 6	0+0.00	411.16(more or less)	8.5	The proposed up ramp is aligned mostly over Nabadiganta Park and will be taken over by KMDA from NDITA.
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3. Carriageway

The present at-grade carriageway along the proposed Elevated Corridor Project is as indicated below:

i) Along main carriageway:

Sl. no.	Chainage (km)		Length (m)	Remark
	To	From		
1	0+110	0+497	387	This section consists of six lane configuration without service road.
2	0+497	0+891	394	This section consists private buildings, water bodies, ponds, pumping stations etc.
3	0+891	2+825.5	1934.5	This section consists of six lane configuration with service road on one side.
4	2+825.5	2+910.5	85	This section consists of private parking, shops etc.
5	2+910.5	4+557.5	1647	This section consists of six lane configuration.
6	4+557.5	5+773.5	1216	Land bank portions of the wetland area.
7	5+773.5	6+100	326.5	This section consists of six lane configuration with service road on one side.

The type of the above mentioned existing carriageway pavements are flexible.

ii) Along Up/Down Ramps:

Sl. No.	Starting/Merging Chainage (km)	Ramp Type	Length (approx.)(m)	Remarks
1	3+950	Down Ramp at SDF more towards college more	370.76 (more or less)	This section consists of four lane configuration without service road. The type of the existing pavement is flexible.
2	4+300	Up Ramp on ring road near Nalbon park sector V	312.89 (more or less)	Ramp to be constructed over the land of Nalbon Park.
3	2+100	Up Ramp near Nabadiganta Park	411.12 (more or less)	Ramp to be constructed over the land of Nabadiganta Park.

4. Metro Station entry/exit ramp crossings:

The Site includes the following;

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Sl.No.	Chainage (km)	Crossing Length (m)
1	1+412.5	89.5
2	2+825.5	50

5. Major junctions

The details of-major junctions are as follows:

Sl. No.	Chainage (Km)	Type of intersection		Category of Cross Road (NH/SH/MDR/Others)
		Legged	At-grade/Seperated	
Chingrighata	0+943	3 legged	At-grade	EM Bypass
Nicco Park	2+875.5	3 legged	At-grade	Salt Lake Ring Road
SDF	3+913.5	3 legged	At-grade	Sector V Ring Road

6. Minor junctions

The details of the minor junctions are as follows:

Sl. No.	Chainage (km)	Type of intersection		Category of Cross Road (NH/SH/MDR/Other)
		Legged	At-grade/Seperated	
1	3+393	3 legged	At-grade	Sector V Ring Road.

7. Providing Right of Way of Construction Zone

The Authority may provide Right of Way of Construction Zone to the Contractor on different stretches of the Site are stated below:-

Phase-1 :- For the following ROW land acquisition is not required as it is already available and hence may be handed over by the Authority to the Contractor.

Sl. No.	Chainage		Length (m)	ROW (m)	Remark
	From	To			
1	0+110	0+460	460	36	
2	0+891	1+318	427	36	
3	1+502	2+799	1297	36	
4	2+910.5	3+838.5	928	21	
5	5+773.5	6+100	332	45	
6	0+082.397	0+453.168	371	5.5	

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Phase-2 :- For the following ROW, land has to be obtained by the Authority from the respective department and expected to be handed over to the Contractor.

Sl. No.	Chainage		Length (m)	ROW (m)	Remark
	From	To			
1	0+769	0+891	122	17	
2	1+318	1+502	184	16.5	
3	2+799	2+910.5	111.5	17	
4	3+838.5	4+173.5	335	17	
5	0+96.73	0+369.62	255	8.5	
6	0+411.16	0+0.00	411	8.5	

Phase-3 :- For the following ROW, the private land need to be acquired by Authority and may be expected for handing over to the Contractor.

Sl. No.	Chainage		Length (m)	ROW (m)	Remark
	From	To			
1	0+729	0+769	40	13	

Phase-4 :- Row of the following region would be obtained from concerned Authority may be expected to cleared and hande dover to the contractor:

Sl. No.	Chainage		Length (m)	ROW (m)	Remark
	From	To			
1	0+460	0+729	269	17	
2	4+173.5	4+525.5	352	17	
3	4+525.5	5+773.5	1248	17	

8. Alignment plans:-

The proposed alignment is originating from the Metropolitan, over Eastern Metropolitan Bypass. It is aligned over the Captain Bherry parallel to metro viaduct alignment. At the Chingrighata intersection, it is crossing the existing ramp at second level in order to ensure smooth traffic flow at Chingrighata intersection during the construction period.

After Chingrighata intersection, the alignment turns slightly right and follows the Metro Corridor up to Nicco Park, passing over the entry exit ramp structures of the metro stations.

After Nicco Park the alignment turns right, it follows the Ring Road up to the Wetland and reaches Mahishbathan (New Town) by crossing over the wetland with all piers in the land banks sections of the Wetland area.

Steel Box Girders have been proposed at important crossings such as Chingrighata and over Entry and Exit ramps of metro stations to optimize the construction time schedule.

In the East Kolkata Wetland area, construction must be carried out with minimum interference to the water body thereby without disturbing, changing and modifying the nature and character of the Wetland. All the piers must be situated in the land bank/bund area only and no earth filling or access preparation of any kind is allowed in the water body.

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Details of additional Up and Down ramps are as follows:

- i) Down ramp of width 6.5 m and length of 370.76m (more or less) near SDF More starting near Ch. 3+950 Km. on main elevated corridor and ending on street no. 18 near junction with street no. 17 (Webel Bus Stop).
- ii) Up Ramp of width 8.5 m, length 411.16 m (more or less) towards Chingrighata starting near Nalbon Park on Sector V Ring Road and merging into the main elevated corridor near Ch. 4+300 Km.
- iii) Up Ramp (width: 8.5m, Length: 312.89 m (more or less) towards Chingrighata starting near Nabadiganta Park and merging into the main elevated corridor at Ch. 2+100 Km.

The alignment of the Project Elevated Corridor is enclosed in alignment plan. Finished road level indicated in the alignment plan shall be followed by the contractor with minimum clear height required from existing road, flyover, Metro railway structure and wet land. In any case, the finished road level of the project elevated corridor shall not be less than those indicated in alignment plan. The contractor shall, however, improve/upgrade the Road profile as indicated in clause 8 based on site/design requirement as per code provisions.

Traffic Signage plan of the Project Elevated Corridor showing numbers & location of traffic sign should be as per code provision.

9. Environment

1. Construction of elevated corridor over Kolkata Wetland side please follows the submitted EIA report to the National Wetland Committee.
2. In non-wet land region in order to cater huge surface run off from deck slab in definite direction provision of rider drain is essential.
3. In wetland area construction of cofferdam for temporary passage road to pass machineries equipment's at the construction point in the wet land area of about 1.5 Km stretch is not allowed should be as per submitted EIA report to the National Wetland committee.
4. Drainage network of special kind is also required for discharge of storm water in the Ramsar stretch of length about 1.5 km. We cannot discharge surface storm water mixed with hydrocarbons to wet land in any case.
5. The Contractor shall ensure full compliance with the Environment protection norms guidelines/ rules/ regulations as prescribed by authorities agencies or as per good/acceptable practices, during the Construction as well as O&M phase as per submitted EIA/EMP report.

10. Development of the Project Elevated Corridor

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A. Alignment and Profile of the Project Elevated Corridor

- i) The Project Elevated Corridor shall follow the existing alignment unless otherwise specified by the Authority and shown in the alignment plans. Geometric deficiencies, if any, in the alignment plan with respect to horizontal and vertical profiles shall be corrected as per the prescribed standards to the extent ROW is available.
- ii) Width of Carriageway

The width of the proposed carriageway (excluding median and crash barrier) is indicated in the table below:

- a) Main Carriageway

S. No.	Chainage (km)		Length (m)	Carriageway Width
	From	To		
1	0+110	2+763.5	2653.5	7.5 X 2
2	2+763.5	2+972	208.5	7.963 X 2
3	2+972	6+100	3128	7.5 X 2

- b) Up and Down Ramp

Sl. No.	Starting/merging Chainage (km)	Ramp Type	Length (m)	Carriageway Width
1	3+356	Down Ramp	370.76	5.5
2	4+209.5	Up Ramp	370.79	7.5
3	1+933	Up Ramp	411.16	7.5

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(iii) Geometric Design and General Features

- i) General

Geometric design and general features of the Project Elevated Corridor shall be in accordance with the IRC 73-2023

- ii) Design speed

The design speed shall conform to manual specified in IRC 73-2023 (Minimum Design Speed of 40Km/Hr is to be considered for the entire elevated corridor except Chingrighata where the minimum design speed to be considered s 35Km/Hr. The superelevation should be designed accordingly.

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iii) Improvement of the existing road geometries

Sl. No.	Stretch (from km to km)	Type of deficiency	Remarks
1	0+110 to 6+100	To be constructed newly	Main Bridge
2	0+82.397 to 0+453.168	To be constructed newly	Down Ramp
3	0+96.73 to 0+369.62	To be constructed newly	Up Ramp
4	0+411.16 to 0+0.00	To be constructed newly	Up Ramp

iv) **Right of Way**

Details of the Right of Way are given in clause 7 before.

v) **Lateral and vertical clearances at underpasses**

Lateral and vertical clearances at underpasses and provision of guardrails/crash barriers shall be as per the provisions of the relevant Manual.

- Lateral and vertical clearance: The width of the opening at the underpasses shall be as follows:

Sl. No.	Location (Chainage) (from km to km)	Span/ opening (m)	Remarks
1	P10-P11 0+891 to 0+946	55	A 5.5 m clearance to be maintained from the existing chingrighata flyover. Steel Box Girder/ Tub Girder has been proposed for the superstructure.
2	P25-P26 1+142.5 to 1+502	89.5	Clear gaps (vertical and horizontal) to be maintained as per drawing from all the adjacent metro stations and entry-exit structures. Steel Box Girder/ Tub Girder has been proposed for the superstructure construction.
3	P63-P66 2+799 to 2+910.5	26.5+50+3 5	Clear gaps (vertical and horizontal) to be maintained as per drawing from all the adjacent metro stations and entry-exit structures. Steel Girders have been proposed for the superstructure construction.
4	P80-P81 3+393.5 to 3+428.5	35	5.5m clear height to be maintained from the existing road.

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5	P95-PR401 3+913.5 to 0+117.397	35	5.5m clear height to be maintained from the existing road. Steel Box Girders/ Tub Girder have been proposed for the superstructure construction.
6	P112-P113 4+525.5 to 4+557.5	32	5.5m clear height to be maintained from the existing road.
7	P113-P137 4+557.5 to 5+521.5	1064	Minimum span of 40m is to be followed for the entire wetland and vertical clearance provided in GAD to be considered as minimum.
8	P134-P135 5+391.5 to 5+441.5	50	5.5m clear height to be maintained from the existing road. Steel girder has been proposed for the superstructure construction.
9	P138-P145 5+521.5 to 5+826.5	305	Piers must be portal to allow the existing road to pass underneath the pier cap. 5.5m clear height to be maintained from the existing road. 5.5m clear distance to be maintained between the portal piers. There is an existing bridge at the RHS Near P140. The span lengths should be suitably adjusted to give clear path way for the existing bridge leading to the nearest housing complex.

vi) Lateral and vertical clearances from Metro rail Structures.

The proposed elevated corridor is passing along Metro Corridor up to Nicco Park Metro Station.

Lateral and Vertical clearance from the Metro structures in the corridor are to be maintained as per drawings (As provided with the Schedules)

vii) Service roads

Service roads shall be constructed at the locations and for the lengths indicated below: [Refer to the provisions of the relevant Manual and provide details]

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SI. No.	Location of service road (from km to km)	Right hand side (RHS)/Left hand side (LHS)/ or Both Sides.	Length (km) of service road
The existing service road has to be restored back to its original condition after the completion of the project elevated corridor on pro rata basis.			

viii) Grade separated structures

- Grade separated structures shall be provided as per the provisions of the relevant Manual. The requisite particulars are given below:

[Refer to the provisions of the relevant Manual and provide details]

Sl. No.	Location of Structure (Chainage in km)	Length (m)	Number and length of spans (m)	Approach Gradient	Remark, if any
1	0+110 to 6+100	5990	As per approved GAD	As per approved GAD	4-lane Flyover, Divided Carriageway from Metropolitan Housing Estate to Mahishbathan.
2	0+82.397 to 0+453.168	371	As per approved GAD	As per approved GAD	2-lane down ramp towards SDF More.
3	0 +96.730 to 0+369.623	255	As per approved GAD	As per approved GAD	2-lane up ramp towards Nalban park.
4	0+411.16 to 0+0.00	411	As per approved GAD	As per approved GAD	2-lane up ramp towards Nabadiganta park.

- In the case of grade separated structures, the type of structure and the level of the Project Elevated Corridor and the cross roads shall be as follows: [Refer to the provisions of the relevant Manual and specify the type of vehicular under pass/ overpass structure and whether the cross road is to be carried at the existing level, raised or lowered]

Sl. No.	Location	Type of structure length (m)	Cross Roads at			Remarks, if any
			Existing Level	Raised Level	Lowered Level	
1	0+82.397m to 0+453.168m	370.76	As per approved GAD			Down Ramp Viaduct arm towards

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				Webel More.
2	0 +96.730m to 0+369.623m	312.89	As per approved GAD	Up Ramp from Sector V Ring Road.
3	0+411.16m to 0+0.00 m	411.16	As per approved GAD	Up Ramp from Salt Lake Ring Road.

ix) Typical cross-sections of the Project Elevated Corridor

The probable typical cross-section drawing attached in clause no.

10. Intersections and Grade Separators

All intersections and grade separators shall be as per the provisions of the relevant Morth revision 5. Existing intersections which are deficient shall be improved to the prescribed standards.

[Refer to the provisions of the relevant Manual and specify the requirements. Explain where necessary with drawings/sketches/general arrangement]

Properly designed intersections shall be provided at the locations and of the types and features given in the tables below:

a. At-grade intersections

SI. No.	Location of intersection	Type of intersection	Other features

b. Grade separated intersection with/without ramps

SI. No.	Location (km)	Salient features	Minimum length of viaduct to be provided	Road to be carried over/under the structures
1	3+950	3-legged junction for providing arm/approach from main corridor towards SDF More	As per approved GAD	As per approved GAD
2	4+300	3-legged junction for providing arm/approach from main corridor towards Nalbon	As per approved GAD	As per approved GAD

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		Park		
3	2+100	3-legged junction for providing arm/approach from main corridor towards Nabadiganta Park	As per approved GAD	As per approved GAD

11. Pavement Design

- a. Pavement design shall be carried out in accordance with the provisions of the relevant to IRC 37-2018 for flexible pavement. And IRC 58 2015 for rigid pavements.

- b. Type of pavement

[Refer to the provisions of the relevant Manual and state specific requirement, if any, of providing cement concrete pavement.]

- c. Design requirements

[Refer to the provisions of the relevant Manual and specify design requirements and strategy]

- i. Design Period and strategy

Flexible pavement for the portion of the road affected during the construction shall be rectified/repared/restored in accordance with the Manual to the condition in which the road was received on the appointed date.

12. Roadside Drainage

Drainage system for the elevated corridor shall be provided as per manual. The portions of the at-grade draining system that might get damaged due to construction of the elevated corridor shall be rectified/repared/restored in accordance with the Manual to the condition in which the road was received on the appointed date.

Drainage network of special kind also required for discharge of storm water in the Ramser stretch of length 1.5 km. We cannot discharge surface storm water mixed with hydrocarbons to wet land in any case.

13. Design of Structures

- a. General

- i. All bridges, culverts and structures shall be designed and

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constructed in accordance with the provisions of the relevant Manual and shall conform to the cross-sectional features and other details specified therein.

ii. Width of the carriageway of new bridges and structures shall be as follows:

Sl. No.	Bridge at km	Width of carriageway and cross-sectional features
1	Main Carriageway 4-Lane from Ch. 0+110 to Ch. 2+763.5, 2653.5m	7.5 X 2
2	Main Carriageway 4-Lane from Ch. 0+635 to Ch. 2+972, 208.5m	7.963 X 2
3	Main Carriageway 4-Lane from Ch. 0+958 to Ch. 6+100, 3128m	7.5 X 2
4	Approach (Down Ramp) at SDF More, 371m	5.5
5	Approach (Up Ramp) at Sector V Ring Road, Nalbon Park, 255m	7.5
6	Approach (Up Ramp) at Nabadiganta Park, 411m	7.5

iii. Drainage system for bridge decks

An effective drainage system for bridge decks shall be provided as specified in the provisions of the relevant Manual.

Drainage network of special kind also required for discharge of storm water in the Ramsar stretch of length about 1.5 km. We cannot discharge surface storm water mixed with hydrocarbons to wet land in any case

i) Grade separated structures

[Refer to the provisions of the relevant Manual]

The grade separated structures shall be provided at the locations and of the type and length specified in paragraphs 3.2 .

14. Traffic Control Devices and Road Safety Works

- a. Traffic control devices and road safety works shall be provided in accordance with Section 9 of the Manual.
- b. Specifications of the reflective sheeting. [Refer to the provisions of the Section 9 of the Manual and specify]

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15. Roadside Furniture

a. Roadside furniture shall be provided in accordance with the provisions of the relevant Manual.

b. Overhead traffic signs: location and size

[Refer to the provisions of the relevant Manual and provide details]

16. Compulsory Afforestation

[Refer to the provisions of the relevant Manual and specify the number of trees which are required to be planted by the Contractor as compensatory afforestation.]

17. Hazardous Locations

The following are the most hazardous locations:

Sl. No.	Location Chainage (km to km)	LHS/RHS	Remark
1	1+278 to 1+530.5	LHS + RHS	However, the portion of the alignment which are close to the metro structures, commercial and residential buildings and wetland are to be treated as hazardous location.
2	4+557.5 to 5+773.5 P113 to P143	LHS + RHS	<ol style="list-style-type: none"> 1. The construction of the elevated corridor in the wetland portion must be carried out through the land bank wherever possible without causing any damage to the Aquamarine life. 2. Storm water collected over the deck area cannot be discharged over the wetland. It is to be carried to the nearest storm water drain outside the wetland. 3. The top level of the Pile Cap should be below the bed level of the adjacent Bherry. 4. Contractor should not dump /discharge/dispose any construction material, waste /deleterious - bentonite, polymer etc. in the wetland area. 5. Construction of temporary access road for substructure and superstructure is permissible for bare minimum width. After completion of deck slab, the land

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			bank has to be restored back to its pre-existing condition.
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19. Change of Scope

The length of Structures and bridges specified hereinabove shall be treated as an approximate assessment. The actual lengths as required on the basis of detailed investigations shall be determined by the Contractor in accordance with the Specifications and Standards. Any variations in the lengths specified shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions .

20. Project Facilities

1. Project Facilities

The Contractor shall construct the Project Facilities in accordance with the provisions of this Agreement. Such Project Facilities shall include:

- (a) roadside furniture;
- (b) pedestrian facilities;
- (c) tree plantation;
- (f) bus-bays and bus shelters;
- (d) rest areas; and
- (e) others to be specified

2. Description of Project Facilities

Each of the Project Facilities is described below:

Sl. No.	Project Facility	Location	Design Requirement	Other essential Details
1	Roadside Furniture including sing boards, gantry sign boards, road marking etc.	Entire project site	As per approved drawings and Manual	
2	Illumination of Project	Entire project site	As per approved drawings and Manual	
		i. LHS-P3B to P10 ii. LHS & RHS- P18 to P27	As per approved	

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3	Noise Barrier	iii. LHS- P43 to P65 iv. LHS & RHS- P113 to P143	drawings and Manual	
4	Height Barrier	At the starting of all Up Ramps	As per approved drawing by Authority's Engineer/EIC	
5	<p>Broad Scope (Not Limited to): Contractor should carry out the bridge Instrumentation as per the best industrial practices and as per the instruction of EIC. Broadly contractor should install Accelerometer, Deflect meter, Strain gauge, load cell in appropriate places and in required numbers in all the large spans (Length more than 50m) and 3% length of the elevated corridor as per project requirement. The contractor should also maintain cloud system up to the DLP/Maintenance period and provide the output to the authority. After completion of such period the contractor will hand over the entire system to the authority in operating condition with necessary training and know-hows. The contractor will bear all costs including the cost of constructing Monitoring room within the ROW for bridge management and monitoring.</p>	As per approved drawings	As per best Industry practices.	

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6	The contractor shall install CC- TV in every 500 m in suitable locations in the entire length of Deck Area including all ramps with all necessary wirings up to the monitoring room.	As per approved drawings	As per best Industry practices.	
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21. Specifications and Standards

a. Construction

The Contractor shall comply with the Specifications and Standards set forth in clause 14 for construction of the Project Elevated Corridor.

b. Design Standards

The Project Elevated Corridor including Project Facilities shall conform to design requirements set out in the following documents:

[Manual of Specifications and Standards for Four Lane of Highways (IRC: SP: 84-2019) and Geometric Design Standards for Urban Roads in Plains (IRC:86)]

22: Specifications and Standards for Construction

a. Specifications and Standards

All Materials, works and construction operations shall conform to the Manual of Specifications and Standards for Four Laning of Highways (IRC: SP: 84-2019) and Geometric Design Standards for Urban Roads in Plains (IRC:86) and MORTH Specifications for Road and Bridge Works. Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Engineer in charge.

b. Deviations from the Specifications and Standards

[Note 1: Deviations from the aforesaid Specifications and Standards shall be listed out here. Such deviations shall be specified only if they are considered essential in view of project-specific requirements.

23. Maintenance Requirements

1. Maintenance Requirements

- i) The Contractor shall at all times maintain the Project Elevated Corridor in accordance with the provisions of this special term sand condition and also technical specification..
- ii) The Contractor shall repair or rectify any Defect or deficiency set forth in this clauses within the reasonable time limit and any failure in this behalf

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shall constitute non-fulfillment of the Maintenance obligations by the Contractor. Upon occurrence of any breach hereunder, the Authority/Employer shall be entitled to effect reduction in monthly lump sum payment without prejudice to the rights of the Authority under this Agreement, including Termination thereof.

- iii) All Materials, works and construction operations shall conform to the MORTH Specifications for Road and Bridge Works, and the relevant IRC publications, Where the specifications for a work are not given, Good Industry Practice shall be adopted.

2. Repair/rectification of Defects and deficiencies

The obligations of the Contractor in respect of Maintenance Requirements shall include repair and rectification of the Defects and deficiencies specified in this clauses within the time limit set forth therein.

3. Other Defects and deficiencies

In respect of any Defect or deficiency not specified in this clauses, the Employer may, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards, and any deviation or deterioration beyond the permissible limit shall be repaired or rectified by the Contractor within the time limit specified by the Employer.

4. Extension of time limit

Notwithstanding anything to the contrary specified in this clauses if the nature and extent of any Defect or deficiency justifies more time for its repair or rectification than the time specified herein, the Contractor shall be entitled to additional time in conformity with Good Industry Practice. Such additional time shall be determined by the Employer and conveyed to the Contractor and the Authority with reasons thereof.

5. Emergency repairs/restoration

Notwithstanding anything to the contrary contained in this clauses, if any Defect, deficiency or deterioration in the Project Elevated Corridor poses a hazard to safety or risk of damage to property, the Contractor shall promptly take all reasonable measures for eliminating or minimizing such danger.

6. Daily inspection by the Contractor

The Contractor shall, through its engineer, undertake a daily visual inspection of the Project Elevated Corridor and maintain a record thereof in a register to be kept in such form and manner as the employer may specify. Such record shall be kept in safe custody of the Contractor and shall be open to inspection by the Authority and the Authority's Engineer at any time during office hours.

7. Pre-monsoon inspection / Post-monsoon inspection

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The Contractor shall carry out a detailed pre-monsoon inspection of all bridges, culverts and drainage system before [1st June] every year in accordance with the guidelines contained in IRC: SP:35, Report of this inspection together with details of proposed maintenance works as required on the basis of this inspection shall be sent to the Employer before the [10th June] every year. The Contractor shall complete the required repairs before the onset of the monsoon and send to the Employer compliance report. Post monsoon inspection shall be done by the [30th September] and the inspection report together with details of any damages observed and proposed action to remedy the same shall be sent to the Engineer in charge..

8. Repairs on account of natural calamities

All damages occurring to the Project Elevated Corridor on account of a Force Majeure Event or willful default or neglect of the Authority shall be undertaken by the Authority at its own cost. The Authority may instruct the Contractor to undertake the repairs at the rates agreed between the Parties.

24. Applicable Permits

1. Applicable Permits

- (i) The Contractor shall obtain, as required under the Applicable Laws, the following Applicable Permits:
- (a) Permission of the State Government for extraction of boulders from quarry;
 - (b) Permission of Village Panchayats and Pollution Control Board for installation of crushers;
 - (c) License for use of explosives;
 - (d) Permission of the State Government for drawing water from river/reservoir;
 - (e) License from inspector of factories or other competent Authority for setting up batching plant;
 - (f) Clearance of Pollution Control Board for setting up batching plant;
 - (g) Clearance of Village Panchayats and Pollution Control Board for setting up asphalt plant;
 - (h) Permission of Village Panchayats and State Government for borrow earth;
 - (i) NOC from National Wetland Committee for the Wetland portion of the flyover.
 - (j) Any other permits or clearances required under Applicable Laws,

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(k) Various departmental approvals as and when required.

(ii) Applicable Permits, as required, relating to environmental protection and conservation shall have been procured by the Authority/Employer in accordance with the provisions of this bed documents.

25. Drawings

1. Drawings

In compliance the Contractor shall furnish all Drawings to the Employer free of cost.

2. Additional Drawings

If requires any extra drawings, it may by notice require the Contractor to prepare and furnish such drawings forthwith. Upon receiving a requisition to this effect, the Contractor shall promptly prepare and furnish such drawings to the Employer.

26: List of Drawings

Following are the list of drawings that the contractor is required to furnish under clause 10.2:

1. General Arrangement Drawings.
2. Detailed design and drawings of foundation, substructure and superstructure.
3. Detailed design and drawings of Crash Barriers, Railings and Footpaths.
4. Detailed design and drawings of wearing coat, flexible pavement in main alignment and service roads, Retaining/RE wall, roadside drains, etc.
5. Detailed fabrication and erection drawings including bill of materials of all structural components of the project.
6. Detailed design and drawings of street lighting.
7. Drawings of road furniture including traffic signages, road markings, and safety barriers.
8. Any other drawings as may be required and asked by Authority, Authority's Engineer and other relevant Authorities for good Engineering practices.

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9. Necessary investigations, survey, study required for the portion of the Project Elevated Corridor passing over the Wetland to receive NOC from respective Environment Departments such as, National Wetland Committee (NWC), East Kolkata Wetlands Management Authority (EKWMA).

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GENERAL SPECIFICATIONS

INTRODUCTION

1. PREAMBLE

The Special Specifications contained herein shall be read in conjunction with the General Specifications and other Bidding Documents as specified in bedding/tender documents.

1.1 Site Information

The information given herein under and provided elsewhere is given in good faith by the Employer but the contractor shall satisfy himself regarding all aspects of site conditions and no claim will be entertained on the plea that the information supplied by the Employer is erroneous or insufficient.

The area in which the Works are located, are generally plain to rolling terrain. The average variation in daily temperature and annual rainfall (based on records) In this region is as under:

Period	Daily Temperature		Rainfall in mm
	Max: °C	Min: °C	
Winter(December-February)	30	10	38
Summer (March-May)	45	28	117
Monsoon(June –October)	32	25	1640

2. GENERAL REQUIREMENTS

The Technical Specification, in accordance with which the entire work shall be constructed and completed by Contractor, shall comprise the following:-

PART I- General Specifications.

PART II - Special Specifications.

2.1 PART I - General Specifications

"The General Specifications shall be the SPECIFICATIONS FOR ROAD AND BRIDGE WORKS" (FIFTH REVISION, 2013), with all the reprints as may be published as on the date of release of the proposal, and issued by the Ministry of Road Transport and Highways; Government of India and published by the Indian Roads Congress, hereinafter referred to as MORTH Specifications.

2.2 PART - II - Special Specifications.

The Special Specifications shall comprise various Amendments /Modifications / Additions to the MORTH Specifications referred to in Part - I above and additional specifications for particular items of works not covered in Part –I.

2.2.1 Where a particular Clause or a part thereof in MORTH Specifications referred to in Part-I above have been Amended/ Modified/ Added upon, and incorporated under

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Part-II, referred to above, such Amendment /Modification/ Addition shall supersede the relevant Clause or part of the Clause. Numbering of Clauses Amended / Modified / Added upon and included in Part II is the same as in Part I.

2.2.2 The additional Specifications shall comprise specifications for particular items of works not covered in Part -I These are given new Clause numbers .

2.2.3. When an Amended/Modified/ Added Clause supersedes a Clause or part thereof in the MORTH Specifications, then any reference to the superseded Clause shall be deemed to refer to the Amended/Modified/ Added Clause or Part II thereof.

2.2.4 In so far as Amended/Modified/ Added Clause or Additional Specifications may come in conflict or be inconsistent with any of the provisions of the MORTH Specifications under reference, the Amended/Modified/ Added Clause and the additional specifications shall always prevail.

2.2.5 The following Clauses of the MORTH Specifications have been Amended/Modified/ Added upon.

102,105,108,109,110,111,112,120,127,128,129,130,301,304,305, 306,
309, 401, 406, 407, 408~ 409, 501, 504, 507, 508, 509, 801, 803, 804, 805, 901,
903, 1006, 1010, 1014, 1502, 1503, 1509, 1601, 1703, 1704, 1705, 1707, 1709,
1713, 1717, 1800,2006, 2201, 2607, 2702, 2706, 2804, 3101 and 3107.

2.2.6 The following Clauses, which are additional to those in the MORTH Specifications have been incorporated in the Special specifications.
127, 128, 129, 130, 904 and 3006

2.2.7 Additional Specifications ·

The following Appendix has been added to the "SPECIFICATIONS FOR ROAD AND BRIDGE-WORKS" (FIFTH REVISION 2013), with all the latest reprints/revisions as maybe published as on the date of release of the proposal and issued by the Ministry of Road Transport and Highways, Government of India and published by the Indian Roads Congress, hereinafter referred to as MORTH Specifications.

1. Appendix-A (Technical Specifications for Clause 305, Embankment Construction with Fly Ash)

2.2.7.1 In the absence of any definite provisions on any particular issue in the aforesaid Specifications reference may be made to the latest codes and specifications of IRC and IS in that order. Where even these are silent, the construction and completion of the works shall conform to sound engineering practice as approved by the Engineer-in-charge and in case of any dispute arising out of the interpretation of the above, the decision of the Engineer shall be final and binding on the Contractor.

2.2.8 Whenever reference is made to specific standards as mentioned in Sub-Clause 2.2. 7 Internationally recognized alternative standards shall be acceptable subject to the Engineer's prior review and written approval . Differences between the standard specified and the

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proposed alternative slandered must be fully described in writing by the Contractor and submitted to the Engineer at least 28 days prior to the desired date of approval. In case the Engineer-in-charge determines that such proposed deviations do not ensure substantially equal performance, the Contractor shall comply with the standards specified in the documents.

SPECIAL SPECIFICATION

TABLE OF MEASUREMENT SYMBOLS

Km	kilometre
m	metre
cm	centimetre
mm	millimeter
m ²	Square metre
cm ²	Square Centimeter
mm ²	square millimeter
m ³	cubic meter
cm ³	cubic millimeter
mm ³	cubic milimetre
h	hour
s	second
KN	kilo-Newton
lit	liter
t	tonne
N	Newton
kg	kilogram gram
g	gram
EIC	

Engineer in Charge Shall mean the Executive Engineer of the Division concerned/Independent Engineer engaged by KMDA, Assistant Engineer concerned is authorized to carry out, on behalf of the "Engineer-in-Charge" general supervision, issue day to day instructions and approval of materials and Workmanship. In case of any dispute, decision of the Engineer-in-Charge shall be final and binding.

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SPECIAL SPECIFICATION

100 GENERAL

Clause 102 DEFINATION

The following abbreviations shall be added in this clause:-

“MORT&H” : Ministry of Road Transport and Highways, Government of India.

“PWD”: Public works Department, Govt. Of West Bengal.

“PWD (NH)”: Public Works Department, National Highway Division.

“KMDA” ; Kolkata Metropolitan Development Authority.

Add a paragraph at the end of the clause:

Whenever in the special specification the phrase “The General Condition of Contract” is used it shall means condition of contract enclosed in the in the Tender documents.”

Clause 105 SCOPE OF WORK

Clause 105.1 This clause shall read as under:

“The work to be carried out this contract Agreement shall consist Complication of the entire scope of the work as described in the Requested for proposal (RFP) as on a EPC Mode turnkey contract Basis.”

Clause 108 SITE INFORMATION

Clause 108.3 Add “as may be required for the construction works” after the bridge site /roads works” in the first line

Clause 108.4 This clause shall be read as follows:

“Identify of quarry sites and borrow areas including the assessment Of availability of construction materials in required quantity is the responsibility of the contractor, Materials procured from those quarry” sites and borrow areas as identify by The contractors and to be used in works must comply with the requirements of the quantity as stipulated in the technical specification for the particular items of works and to be got approved.

Clause 109. SITTING OUT

Clause 109.9 Deleted the 2nd and 3rd sentences and following “Sitting out of The road alignment and measurement angles shall be done by Using Electronic total station with angular accuracy ± 1 second

Clause 109.10 Add the following Clauses:

In addition to the provision stipulated in clauses 109.1 to 109.9, the following particulars requirements shall also apply for all survey and other works necessary for the sitting out and measurement of the works

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Unless otherwise directed by the Employer or Engineer-in-charge, survey Work for the installation or checking of control stations and branch marks shall be commenced as soon as practicable after the contractors receipts of the letter of acceptances and the survey methods, procedures, computations and transverse data obtained shall be subjected to the approved of the Engineer-in-Charge. The Contractor shall install any additional pillars necessary for the survey control networks and those pillars shall be positioned, installed and safe guarded such that there will be no dislodgement or disturbance during the period of works. The location, from of construction and measurement for their protection shall be agreed with the Engineer-in- Charge”

During the period of the Works the contractor shall deploy adequate instrument and equipment on the extent which, in the opinion of the Engineer-in-Charge, are necessary for the satisfactory progress of the construction operation and the control and line and level. All survey instrument shall be kept properly maintained and the instruments shall be regularly calibrated to verify the accuracy of the operation.

When directed by the Engineer-in – charge, Survey work installation of control stations and branch marks, center line stacking, measurement of original ground levels and control lines and level shall be carried out jointly by the staff assigned by the contractor and the Engineer-in-Charge for this works. The Contractor shall, however facilitated any verification of survey or sitting out works which the Engineer –in-Charge may elect to carryout independently. The survey instrument and equipment necessary for this purpose shall be made available by the contractor.

Auto CAD (latest Version) proprietary software or other such software approved by Engineer-in-Charge shall be used for the preparation of drawings and maps to be submitted by the contractor for the engineer-in-Charge’s approved.

Clause 110. PUBLIC UTILITY

Clause 110.1 Replace all the clauses with the following:-

“Encumbrances such as tree and Utility services like water pipes, Sewers, oil pipelines, Optical fiber cables, other cables, Gas pipelines, Electricity lines and accessories, telephonic poles etc. owned by varies authorities including Public Under taking, local and Central Authorities shall verified by the contractor for accuracy of the in formation prior to the commencement of the work”.

Clause 111. PRECUTIONS FOR SAFEGUARDING THE ENVIRONMENT

This whole clauses described as below:-

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Clause 111.1 GENERAL

The Contractor shall take all precautions for safeguarding the environment during the course of the construction of the works. He shall abide by all laws, rules and regulations in force governing pollution and environmental protection that are applicable in the area where the works are situated.

NOISE

The contractor shall mitigate any sustained increase in base line ambient vsound levels at sensitive reports during the construction works.

All contractors operations shall be performed in a manner to minimize noise and vibration. The parameters for noise are detailed below:-

- 70 to 65 dB(A) for day and nights.
- 50dB(A) for day and 45dB(A) for night for residential and silence zone area.

If the noise level are found to be these standards and it is determined by the Engineer in Charge that these levels are due to the equipment and plants being deployed by the contractor, he shall undertake, at his own cost measures as approved by the engineer-In- Charge, to bring these levels down to the specific levels. Contractor shall ensure:-

- Stationary equipment will be placed at a reasonable safe distance from inhabited areas as well as from sensitive areas to minimize noise impacts as WB PCB guidelines.
- Construction activities are generally prohibited between 10p.m. to 6a.m. near habitations. However the contractor must be prepared to continue works during night for which he shall obtained prior permission of Employer / Engineer-In-charge.
- Provision of using ear plugs and helmets for workers exposed to high noise levels.
- Erecting sign boards at sensitive and residential locations prohibiting use of the air horns.

Labour shall be warned against the hunting of wild life, if any. No archaeological site shall be disturbed.

Clause 111.2 Borrow pits for Embankment Construction

Borrow pits shall be selected only after testing the suitability of materials for use in construction and shall not normally be dug in the right-of-way of the road. The stipulations in Section 305.2.2 shall govern. The borrow pits shall not be left in a condition likely to cause hazard to human and animal life. The Contractor shall seek prior approval from the concerned authorities for operating the borrow pits. The excavation shall be carried out in such a way that the area does not inundated during monsoons and generate cesspools of water for breeding site of mosquitoes.

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All borrow pits for earth work for the road embankment contractions shall have to arrange by the contractor.

Clause 111.3 Quarry Operations

The contractor shall obtain material from licensed quarries only after the consent of the forest department or other concerned authorities. The quarry operation shall be undertaken within pie purview of the rules and regulations in force. Contractor shall ensure scheduling the movement of transport carrying material to and from site during non-peak hours. The trucks' carrying dusty materials/fly ash shall be covered with tarpaulin and provided with adequate free boarda to prevent spillage, End boards shall be provided in loaders to prevent spillage. Stockpiling of material shall be properly planned so as to ensure that no traffic jam takes place on the high way.

Clause 111.4 Control of soil Erosion, Sedimentation and Water Pollution

The contractor shall carry out the works in such a manner that soil erosion is fully controlled, and sedimentation and pollution of natural water courses, ponds, tanks and reservoirs is avoided. The stipulations in Clause 306 shall govern.

Clause 111.5 Pollution from HOT Mix Plants and Batching Plants

Stone crushing and screening plants, bituminous hot-mix plants, concrete batching plants etc. shall be located sufficiently away from habitation,(more than 500 m any community or residence) agricultural operations or industrial establishments. The locations shall be as permissible under the laws governed by local bodies/ administration of the area. The Contractor shall take every precaution to reduce the levels of noise, vibration, dust and emissions from his plants and shall be fully responsible for any claims or damages caused to the owners of property, fields and residences in the vicinity and violation of pollution control norms, if any.

Clause 111.6 Substances Hazardous to Health

The Contractor shall not use or generate any materials in the works which are hazardous to the health of persons, animals or vegetation. Where it is necessary to use some substances which can cause injury to the health of workers, the Contractor shall provide protective clothing or appliances to his workers.

Clause 111.7 Use of Nuclear Gauges

Nuclear gauges shall be used only where permitted by the Engineer. The Contractor shall provide the Engineer with a copy of the regulations governing the safe use of nuclear gauges he intends to employ and shall abide by such regulations.

Clause 111.8 Occupational Health and Safety of the Workforce

The Contractor shall prepare and submit to the Engineer the Occupational Health & Safety Procedures/ Practices for the workforce in all quarry sites, plant sites, work sites, camp sites, etc., in accordance with the applicable laws.

Clause 111.9 Precautions against Dust

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The contractor shall take all reasonable steps to minimize dust nuisance during the construction of the works. All existing roads used by vehicles of the contractor or any of his sub-contractor or suppliers of materials or plant, and similarly any new roads which are part of the works and which are being used by traffic, shall be kept clean and clear of all dust/mud or other extraneous material dropped by the said vehicles or their tyres. Similarly, all dust or mud or other extraneous material from the works spreading on these roads shall be immediately cleared by the contractor. Clearances shall be done immediately by manual sweeping and removal of debris, or, if so directed by the Engineer-in-charge, by mechanical sweeping and clearing equipment, and all dust, mud and other debris shall be removed entirely from the road surface. Additionally, the road surface shall be hosed or watered using suitable equipment to avoid dust pollution. Special care shall be taken to combat dust problem originating from use of fly ash.

Clause 111.10 Road Safety

The contractor shall provide adequate circuit for traffic flow around construction areas, control speed of construction vehicles through road safety and training of drivers, providing adequate diversions sign, traffic lightings, barriers and flag persons for traffic control. If there is a traffic jams during constructions, measures shall be taken to relief the congestion with assistance of traffic police. Safety of workers under taking various operations during construction will be ensured by providing helmets, masks safety goggles etc.

Clause 111.11 Sanitary and Waste Disposal in Construction Camp

Contractor shall ensure that construction camps are located at a distance of minimum 200 meter from the water sources. Special attention shall be paid to the sanitary conditions of the camps. The contractor shall ensure that sufficient measures are taken i.e. provision of garbage tanks and sanitary facility. Waste of septic tanks shall be cleaned periodically. Garbage shall be collected in four soakage pits at each construction site and disposed of daily. Contractor shall provide adequate measures for health care of workers and arrange their regular medical health check-up to ensure that they do not suffer from communicable disease. At every workplace, good sufficient potable water supply will be provided to avoid water borne /water related diseases. Prior permission of the engineer in charge and regulatory authority shall have to be taken by the contractor for discharging or disposing of any material arising from excavation of the workers.

Clause 111.12 Structural Damage

Any structural damage caused to the existing roads/structures by his construction equipment/activity shall be made good without any extra cost.

Clause 111.13 Environment Monitoring

In order to carry out checks environment monitoring will be carried out by the Engineer-in-charge as per schedule and if any parameter is found above the acceptable standards, mitigation measures/control measures as decided and sanctioned by the Engineer-in-charge shall be complied by the contractor.

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Clause 111.14 Environment Protection Plan

Within four months of the signing of the Contract Agreement, the Contractor shall submit an Environmental Protection Plan with operational details of his proposals to the Engineer for his approval.

Clause 111.15 Environmental Officer

The Contractor shall have on his staff on Site for the duration of the Contract a designated officer qualified to promote and maintain sound environmental management during construction and specifically the implementation of the approved Environmental Protection Plan and who shall be deployed with prior approval of the Engineer-in-charge. This officer shall have authority to issue instructions and shall take precautionary measures to prevent environmental damage, including but not limited to the establishment of environmentally sound working practices and the training of staff and labour in their implementation.

Clause 111.16 Bio-Engineer

The Contractor shall have on his staff on Site for an appropriate period at least one individual who has had practical experience in the use of vegetation for civil engineering purposes and who shall be deployed with prior approval of the Engineer-in-charge. Such an individual is likely to have successfully completed tertiary studies in forestry, agricultural engineering, landscape architecture or environmental science, and will be responsible for the Contractor's bio-engineering programme and the re-vegetation of all land affected by the Contractor's activities in accordance with Clauses 129.6 and 131.5 of these Special Specifications. The bio-engineer will also be responsible for overseeing the replanting of trees under the Social Forestry Programme.

If the Environmental Officer is suitably qualified, that individual can undertake the tasks of the Bio-Engineer,

Clause 111.17 Environmental Protection during Construction

The Contractor shall use such construction methods and shall maintain all borrow / stockpile / spoil disposal area so as to assure the stability and safety of the Works and any adjacent feature, to assure free and efficient natural and artificial drainage and to prevent erosion.

The Engineer-in-Charge has the power to disallow the method of Construction and / or the use of any borrow/ stockpile / spoil disposal area if in his opinion the stability and safety of the Works or any adjacent feature is endangered, or if there is undue interference with the natural or artificial drainage, or if the method or use of the area will promote undue erosion.

Borrow areas and quarries shall be sited, worked and restored in accordance with Clause 306 of the Specifications. Spoil shall be disposed of at approved disposal sites prepared, filled and restored in accordance with same Clause

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306. Following excavation for the works, the Contractor shall take all steps necessary to complete drainage and slope protection works in advance of each rainy season. Erosion or instability or sediment deposition arising from operations not in accordance with the Specifications shall be made good immediately by the Contractor at his expense. The Contractor shall also take all steps necessary to complete drainage in advance of each rainy season in the areas excavated for borrowing materials.

Notwithstanding approval of the intended method of working, the Contractor shall at all times be responsible for constructing the earthworks in accordance with the Specifications and Drawings.

The project area can experience inclement weather and climatic seasonal variations and earthquakes, It will be deemed that the Contractor is familiar with these conditions and has formulated his work programme considering possible loss of time due to these causes, and it shall be the obligation of the Contractor to revise his work programme and enhance his construction efforts as necessary to ensure timely completion of the work scheduled for each working season.

Clause 111.18 Re-vegetation of disturbed Ground

Where directed by the Engineer-in-charge, the contractor shall establish vegetation on the field as well as cut slopes worked out borrow pits and other areas which may include roadway shoulders and verges, spoils disposal areas, stockpile areas, quarries, axes tracks, plants sites, camps, landslide scars, gullies and stream and river banks. Prior to placing topsoil and/or establishing vegetation on embankments, all fill materials not compacted to the required standards shall be removed from the side slopes.

The contractor shall be responsible for supplying sufficient planting materials to carry out all re-vegetation work and shall establish and operate plants nuisance as necessary and shall make his own arrangements for procuring, cutting, slips and seed for growing.

Clause 111.19 Prevention of Pollution

The Contractor shall ensure that his activities do not result in any contamination of land or water by polluting substances. He shall implement physical and operational measures such as earth dikes of adequate capacity around fuel, oil and solvent storage tanks and stores, oil and grease traps in drainage systems from workshops, vehicle and plant washing facilities and service and fuelling areas and kitchens, the establishment of sanitary solid and liquid waste disposal systems, the maintenance in effective condition of these measures, the establishment of emergency response procedures for pollution events, and dust suppression, all in accordance with normal good practice and to the satisfaction of the Engineer-in-charge.

Any pollution, arising from the Contractor's activities including the im

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proper deposition of sediment, such pollution / affected area shall be cleaned up immediately by the contractor at his own cost including the payment of full compensation to all the affected parties to the satisfaction of the Engineer-in-charge.

Clause 111.20 Protection of trees and Vegetation

Unless otherwise provided in the Specifications, the Contractor shall ensure that no trees or shrubs or waterside vegetation are felled or harmed except for those required to be cleared for execution of the Works. The Contractor shall protect trees and vegetation from damage to the satisfaction of the Engineer-in-charge. The Contractor shall be responsible for obtaining any necessary felling permits and for ensuring the disposal of felled trees in accordance with prevailing regulations. No tree shall be removed without the prior approval of the Engineer-in-charge and any competent authorities. Should the Contractor become aware during the period of the Contract that any tree or trees designated for clearance have cultural or religious significance he shall immediately inform the Engineer-in-charge and await his instructions before proceeding with clearance.

In the event that trees or other vegetation not designated for clearance are damaged or destroyed, they shall be repaired or replaced to the satisfaction of the Engineer-in-charge.

Clause 111.21 Use of wood as fuel

The Contractor shall not use or permit the use of wood as a fuel for the execution of any part of the Works, including but not limited to the heating of bitumen and bitumen mixtures, and to the extent practicable shall ensure that fuels other than wood are used for cooking, space and water heating in all his camps and living accommodations. Any wood so used must be harvested legally, and the Contractor shall provide the Engineer-in-charge with copies of the relevant permits if required.

Clause 111.22 Disposal of Materials outside Work Site

Notwithstanding other relevant provision in the contract, the excess material generated by dismantling, excavation, waste material and lubricants, used oil, gasoline and other such substance etc., shall be removed from site, outside the right of way at regular intervals and site shall be kept clean from all such disposable materials, grease, cotton and other wastes construction material will be disposed off in shallow soakage wells constructed in each construction site. Such intervals shall not exceed one month under any circumstances. The selection of the disposal site shall be the responsibility of the contractor and he shall ensure that the selected site does not result in any claim for damages to the employer or violation of any existing laws.

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Clause 111.23 Fire Prevention

In addition to the provision of adequate fire-fighting equipment at his base camp and other facilities to the satisfaction of the Engineer, the Contractor shall take all precautions necessary to ensure that r vegetation along the line of the road outside the area of the permanent works is affected by fires arising from the execution of the Works.

Should a fire occur in the natural vegetation or plantations adjacent to the road for any reason the Contractor shall immediately suppress it. In the event of any other fire emergency in the vicinity of the Works the Contractor shall render assistance to the civil authorities to the best of his ability.

Areas of forest, shrub or plantation damaged by fire considered by the Engineer to have been initiated by the Contractor's staff or labour shall be re planted and otherwise restored to the satisfaction of the Engineer-in-charge at the Contractor's expense.

Clause 111.24 Restricted Area

In undertaking the Works, the Contractor shall be aware that the Engineer in-charge will not grant permission for temporary facilities including but not limited to borrow pits, quarries, and labour camps (except for watchmen) and ancillary activities in forested areas or land officially declared as forest. The Engineer-in-charge may also prohibit or restrict the Contractor's activities in other ecologically, culturally or historically sensitive areas which become known to him during the course of the project. The location of any such areas shall be notified to the Contractor by the Engineer at the earliest opportunity.

Clause 111.25 Relations with Local Communities and Authorities.

In locating and operating his plant and facilities and in executing the Works the Contractor shall at all-time bear in mind and to the extent practicable minimize the impact of his activities on existing communities. Where com munities are likely to be affected by major activities such as road widening or the establishment of a camp or quarry or extensive road closure or by passing, he shall liase closely with the concerned communities and their representatives and if so directed, shall attend additional meetings arranged by the Engineer-in-charge or Employer to resolve issues and claims and minimize impacts on local communities.

Any problems arising from his operations and which cannot be resolved by the Contractor shall be refered to the Employer through the Engineer-in charge. The Contractor shall be responsible for any compensation due or re instatement necessary with respect to any damage caused by him to areas outside the Site and no separate payment will be made in this regard.

Clause 111.26 Water supply for construction

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The Contractor shall make his own arrangements at his own expense for water supply for construction and other purposes. Only clean water free from deleterious materials and of appropriate quality for its intended use shall be used. In providing water the Contractor shall ensure that the rights of and supply to existing users are not affected either in quality, quantity or timing. In the event of a dispute over the effect of the Contractor's arrangements on the water supply of others, the Engineer-in-charge shall be informed immediately and shall instruct the Contractor as to appropriate remedial actions to be undertaken at his expense

Clause 111.11 Measurement for Payment

Works prescribed in clause shall not be paid separately, same shall be deemed to be included in lump sum cost agreed(Turnkey) for the entire project.

Clause 112 ARRANGEMENTS FOR TRAFFIC DURING CONSTRUCTION

Clause 112.1 General

Two weeks before undertaking works which would involve any obstruction whatsoever to traffic the Contractor shall submit, for the engineer in charge for approval, a Traffic Control Plan shall include:-

- i) Provision of a qualified safety officer with support staff to serve as a site safety team
- ii) Provision of traffic safety devices and road signs in construction zones as per IRC:SP:55 and other relevant IRC Codes and clause 112.4.
- iii) Safety measures for the workers engaged including personal protection equipment
- iv) First aid and emergency response arrangements
- v) Details and drawings of arrangements in compliance with other sub Sections of this Section

Clause 112.3 Passenger of Traffic along a temporary Diversions

Delete the first paragraph and replace with:-

“In stretches where it is not possible to pass the traffic on part width of the carriageway, a temporary diversion shall be constructed with 7 m carriageway and 2.5 m earthen shoulders on each side (total width of roadway 12 m) with the following provision for road crust in the 7 m width:

- i) Earthwork
- ii) 200 mm (compacted) Granular sub-base
- iii) 225 mm (compacted) Granular base course
- iv) Priming and Tack Coat and
- iv) Premix carpet with Seal Coat/Mix Seal Surfacing.

The location of such stretch, alignment and longitudinal section of diversion including junctions and temporary cross drainage provision shall be as approved by the Engineer.

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Clause 112.4 Traffic safety and Control

The Contractor shall take all necessary measures for the safety of traffic during construction and provide, erect and maintain such barricades, including signs, marking, flags, lights and flagmen as per the traffic management plan submitted by the Contractor and approved by the Engineer, referred to in Sub-Section 112.1. Before taking up any construction, an agreed phased programme for the diversion of traffic on the highway shall be drawn up in consultation with the Engineer.

All construction equipment working or parked on or within the traffic lanes or shoulders under "Traffic maintained" conditions shall be equipped with flashing yellow beacons.

The Contractor shall conduct all operations to minimize any drop-offs (abrupt changes in roadway) exposed to traffic. Drop-offs in the travelled way shall be protected by a wedge of compacted stable material capable of carrying traffic (the wedge being 1 vertical to 4 horizontal or flatter).

The Engineer shall authorize other methods, to protect drop-offs when conditions do not allow a wedge of compacted, stable material.

Warning signs, barricades, warning lights, and all other traffic control devices shall not be removed if the hazard has not been eliminated. Only upon receipt of specific written authorization from the Engineer, the Contractor may remove or cease to maintain warning signs, barricades, warning lights, and all other traffic control devices.

The barricades erected on either side of the carriageway/portion of the carriageway closed to traffic, shall be of strong design to resist violation, and painted with alternate black and white stripes. Red lanterns or warning lights of similar type shall be mounted on the barricades at night and kept lit throughout from sunset to sunrise.

At the points where traffic is to deviate from its normal path (whether on temporary diversion or part width of the carriageway) the channel for traffic shall be clearly marked with the aid of pavement markings, painted drums or a similar device to the directions of the Engineer. At night, the passage shall be delineated with lanterns or other suitable light source including solar energy bulbs.

One-way traffic operation shall be established whenever the traffic is to be passed over part of the carriageway inadequate for two-lane traffic. This shall be done with the help of temporary traffic signals or flagmen kept positioned on opposite sides during all hours. For regulation of traffic, the flagmen shall be equipped with red and green flags and lanterns/lights.

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On both sides, suitable regulatory/warning signs as approved by the Engineer shall be installed for the guidance of road users. On each approach, at least two signs shall be put up, one close to the point where transition of carriageway begins and the other 120 m away. The signs shall be of approved design and of reflective type, as directed by the Engineer.

“Before commencement of any construction, the contractor, shall prepare and submit the design of barrications, signs, markings, lights, flags, etc.
And get the same approved by the engineer in charge”.

Clause 120 SITE OFFICE FOR ENGINEER, EMPLOYER AND OTHER SUPERVISORY STAFF

The above clause may be deleted and follow the clauses in the special terms and condition of the tender documents.

Clause 121 FIELD LABORATORY

Clause 121.2 Description

Replace the words: "electric supply" in the second sentence of the first paragraph with uninterrupted water and power supply."

Add the following at the end of this Clause:

"The field laboratory to be provided under the Contract shall be handed over to the Engineer in finished and fully equipped condition not later than 2 months after the Engineer's order to commence work and such building shall be to the entire satisfaction of the Engineer- in-charge. During the period specified, the laboratory tests shall be performed in another laboratory proposed by the Contractor and approved by the Engineer in charge. All costs arising from these tests shall be borne by the Contractor."

Clause 121.2 Laboratory Equipment

This Clause shall read as under, all sub-clauses being deleted:

"The quality of the laboratory equipment shall be to the satisfaction of the Engineer. The equipment must be provided and kept in good working order through out the works. It will not be the property of the Employer at the end of the works.

The following items of laboratory equipment with their minimum numbers as specified shall be provided in the field laboratory.

Sl. No.	Description	Quantity
A. General		
1	Ceiling Fan (standard size), Orient make or equivalent.	4 nos.

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2	Air Conditioners: Air Conditioners shall be split type of 1.5 T Carrier or equivalent make.	2 nos
3	Balance (a) 20 kg to 10 kg capacity semi-self-indication type. (b) Electronic digital balance, 100 g capacity accuracy 0.001 g (c) Balance, 5 kg capacity accuracy 0.1 g (d) Balance, 2 kg capacity accuracy 0.05 g (e) Platform scale - 300 kg capacity.	1 no. 1 no. 1 no. 1 no. 1 no.
4	Oven-electrically operated, thermostatically controlled: up to 220° C sensitivity 1oC	1 no.
5	Sieves: as per IS: 460 and Clause 104. (a) IS sieve sets 450 mm internal dia. as per IS of required sieve sizes complete with lid and pan (sizes as shown in Clause: 104). (b) IS sieve sets 200 mm internal dia. (brass frame and steel or brass wire cloth mesh) of required sieve sizes complete with lid and pan. (sizes as shown in Clause 104).	1 set 1 set
6	Sieve shaker capable of taking 200 mm dia sieves, electrically operated, with time switch assembly.	1 no.
7	Compression and flexural strength testing machine of 200 tonne capacity with additional dial for flexural strength test.	1 no.
8	Electronic digital stop watches, 1/5 sec. accuracy.	1 no
9	Glassware comprising beakers, pipettes, dishes, measuring cylinders (100 to 1000 cc capacity), glass rods and funnels, glass thermometers range 0C to 100°C and 0°C to 250C and metallic thermometers range up to 300c	1 dozen each
10	Hot plates 200 mm dia. (1500 watt)	1 no.
11	Gas stove with LPG cylinder	1 no.
12	Enamel Trays: (a) 600 mm x 450 mm x 50 mm (b) 450 mm x 300 mm x 40 mm (c) 300 mm x 250 mm x 40 mm (d) Circular plates of 250 mm di	3 nos. 3 nos. 3 nos. 3 nos
13	Riffle box - big size	1 no
14	Riffle box - small size	1 no
15	Sufficient number of scoops, hand gloves, steel measuring scales, tongs, ladle spoons, stirrers, aprons, etc.	1 set
16	Water testing kit	1 set
17	First Aid Box	1 no

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B. For Soils and Aggregates		
	Description	Quantity
1	Auerberg's limits determination apparatus as per IS 2720 Part 5 including liquid limit apparatus as per IS: 11196-85	1 no
2	Sampling pipettes fitted with pressure and suction inlets, 10 ml capacity	1 set
3	Compaction apparatus for light and heavy compaction as per IS: 2720 (parts 7 & 8) complete with collar, base plate, straight edge and hammer. Light Compaction Heavy Compaction	1 no 1 no
4	Sand pouring cylinder with conical funnel, tray, containers and accessories complete as per IS: 2720 (Part 28) 1974 including modified equipment. Small Large	3 nos 2 nos
5	Sampling containers with lids capacity 2 kg and miscellaneous items like moisture containers with lid of capacity 50 g, etc.	24 nos. each
6	Non-nuclear Instant Density Testing Equipment for bituminous works	1 no.
7	Lab CBR testing equipment for conducting CBR test, load frame with S capacity, electrically operated with speed control as per IS: 2720 (Part 16), and consisting of the following : (a) CBR moulds 150 mm dia - 175 mm ht. complete with collar, base plate, etc. (b) Tripod stands for holding dial gauge holder. Sampling containers with lids capacity 2 kg and miscellaneous items like 24 nos. each moisture containers with lid of capacity 50 g, etc.. (c) CBR plunger with settlement dial gauge holder. (d) Surcharge weight 147 mm dia, 2.5/1.5 kg wt. with central hole. 2.5 kg Technical Specifications 1.5 kg (e) Spacer disc 148 mm dia, 47.7 mm ht. with handle. (f) Perforated plate (brass). (g) Soaking tank for accommodating 24 CBR moulds. (h) Proving rings of 100 kg, 2500 kg and 5000 kg capacity with load dial gauges for each proving ring (i) Dial gauges, 25 mm travel-0.01 mm/division.	1 set 12 nos. 12 nos 1 no. 24 nos. 12 nos. 1 no. 12 nos. 1 no. 1 no. each 3 nos.
8	Speedy moisture meter complete with chemicals	2 nos
9	Specific Gravity bottles	2 nos
10	Vacuum pump	1 no

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11	Grain size analysis apparatus of fraction passes 75 micron as per IS:720 (Part 14).	1 no.
12	Apparatus for determination of density index as per IS: 2720 (Part 14)	1no
13	Unconfined compression test apparatus.	1 set
14	Flakiness and elongation test gauges	1 no
15	Aggregate impact test apparatus as per IS: 2386 (Part 4), 1963	1 no
16	Los Angeles abrasion apparatus as per IS: 2386 (Part 4), 1963	1 no
17	Test apparatus for determination of ten percent fines value (TFV) as per BS: 812-1975	1 no
18	Riffle box	1set
C. For Bitumen and Bituminous Mixes		
1	Penetrometer with standard needles and adjustable weight arrangement	1 Set
2	Constant temperature bath for accommodating bitumen test specimen, electrically operated, and thermostatically controlled	1 no.
3	Electrically operated centrifuge type apparatus complete with extraction thimbles, with solvent and filter paper	1 no.
	Description	Quantity
4	Laboratory mixer including required accessories about 0.02 m capacity, electrically operated, fitted with heating jacket.	1 se
5	Marshall compaction apparatus automatically operated as per ASTM 1559-62 T and complete with electrically operated loading unit, compaction pedestal breaking head assembly, dial micrometer and bracket for flow measurement, load transfer bar, specimen mould 100 mm dia. (4in.) with base plate, collars, specimen extractor, compaction hammer 4.53 kg x 457 mm (18 in.) fall and accessories	1 Set
6	Distant reading thermometer	1 no
7	Field density bottle along with cutting tray, chisel, hammer and standard sand.	1 no
8	Riffle box small size	1 no
9	Core cutting machine with 10 cm dia. diamond cutting edge with accessories	1 set
D. For Cement, Cement Concrete and Materials		
1	Water still.	1 no
2	Vicat needle apparatus for setting time with plungers, as per IS: 269-1967	1 no

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3	Moulds: 150 mm cube	15 nos
4	High frequency mortar cube vibrator for cement testing	1 no
5	Concrete mixer power driven, 7 cu. ft. Capacity	1 no
6	Variable frequency and amplitude vibrating table size 1 m x 1 m, as per the relevant British Standard	1 no
7	Flow tables as per IS: 712- 1973.	1 no
8	Equipment for slump test.	2 nos
9	Equipment for determining the specific gravity for fine and coarse aggregate as per IS: 2386 (part 3) 1963	1 no
10	Flexural attachment to compression testing machine.	1 no
11	Needle vibrator	1 no
12	1.0 cu. ft. Steel box for checking bulk density of aggregate with tamping rod.	1 no
13	Soundness testing apparatus for cement.	1 no
14	Curing tank of suitable capacity	1 no

Notes:- The Contractor shall provide latest revisions of relevant BIS (Bureau of Indian Standards) and AASHTO/ASTM codes and methods of test in the laboratory. All records for the field and laboratory testing of materials shall be maintained in a computerized database format by means of a proprietary software application approved by the Engineer and the Contractor shall ensure that his laboratory staffs are adequately experienced in the use of such database systems. The Contractor shall have on site a sufficient stock of chemicals to allow the testing to be carried out in tandem with the work. The Contractor shall also provide sufficient technical and support personnel in the laboratory to allow the sampling and testing required both for his own testing and all additional testing which may be required from time to time by the Engineer. KMDA quality control staff will also be allowed to utilize the equipment listed 121.3.

Clause 121.31

If required, the Engineer In charge/ Employer may require third party inspection/ testing, which shall be done and executed as per provisions of Clause 25.3 of Special Terms and Condition.

Clause 121.4 Ownership

This Clause shall read as under:

"The field laboratory building and laboratory equipment shall not be the property of the Employer at the end of the works."

Clause 121.5 Maintenance

This Clause shall read as under:

"The Contractor shall arrange to maintain the field laboratory in a satisfactory manner until the issue of Taking over Certificate for the complete work."

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Clause 121.6 Measurements for Payment

This Clause shall read as under:

"The supply of laboratories together with equipment and furniture, and their maintenance and charges for utilities shall be treated as incidental to the work and no additional payment will be made."

Clause 121.7 Rate

This Clause shall read as under:

"The construction, maintenance, operation including all expenses involved in connection thereto for the field laboratory shall be incidental to the work, and shall not be paid separately."

Clause 127 EQUIPMENTS

Clause 127.1 LIST OF EQUIPMENTS

Before starting any construction activity, the contractor shall submit to the engineer, a detailed list of the equipment to be used during construction for his approval.

The list will start:-

- Type of equipment and quantity.
- Capacity of the equipment.
- Identification codes(name and inventory code)
- Manufactures name
- Year of manufacture and
- Proposed assignments on the project.

Clause 127.2 Working condition of the equipment

All equipment on site shall be in perfect working conditions. The engineer shall check the performance and output of each equipment's during site trials specified for each construction process.

Clause 127.3 Maintenance of the Equipment

The contractor shall maintain his equipment on site. He shall furnished workshop, skilled personal and transport facility to the site and keep it during the contract at his own expense. Before starting any construction activity, the contractor will provide the engineer with a complete list of all personal who will maintain the contractors equipment on site, with a brief resume for all the key personal.

Clause 128 SAFETY PROVISIONS

- i) Group Insurance to be provided for safeguarding the working labours.
- ii) Safe means of access shall be provided on all working platforms and other working places. Every ladder shall be securely fixed. Non portable single ladder shall be 9.0 meter in length. Width between side rails in a rung ladder shall in no case shall be less than 30 cm for ladders upto and including 3.0m in length. For longer ladder the width shall be increased at

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- least 6mm for each additional 30 cm of length. Spacing of steps shall be uniform and shall not exceed 30 cm.
- iii) All trenches ,1.5m or more in depths, shall at all times be supplied with at least one ladder for each 20m in length or fraction there off. Ladder shall be extended from bottom of the trenches to at least 1.0m above the surface of the ground. Sides of the trenches 1.5m or more in depth shall be stepped back to give suitable slopes or secured held by timber bracing. So as to avoid the danger of collapsing of sides. Excavated materials shall not be placed within 1.5m of the edge of the trench or half of depth of the trenches whichever is more. Cutting shall be done from top to bottom.
- iv) No electric cables or apparatus which is liable to be a source of danger shall remain electrically charged when they are not in use.
- v) All practical steps shall be taken to prevent danger. Adequate safety is to be provided to persons employed by the employer, from risk of fire or explosion or flooding.
- vi) Workers employed on mixing of asphalt materials, cement lime mortars/concrete shall be provided with protective footwear, hand gloves and protective goggles.
- vii) Use of hoisting machines and tackle including their attachments, anchorage and supports shall be confirm the following:-
- 1) These shall be good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept in good working condition and properly maintained.
 - 2) Every rope used in hosting of lowering materials or as a means of suspensions shall be durable quantity and adequate strength and free from defects.
 - 3) Every Crain driver or hoisting appliance operator shall properly qualified and no person under the edge 21 shall be in charge of any hoisting machines including scaffolding or of signals to operate.
 - 4) In case of every hoisting machine and of every chain hook, shackles swivels and pully block used in hosting, lowering or means of suspensions, safe working loads shall be ascertain by adequate means. Every hoisting machines and all gear referred to above shall be plainly marked with safe working load. In case of hoisting machines with variable safe working loads, each safe working loads and conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in the paragraph shall be loaded before safe working load except for the purpose of testing.

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- 5) The contractor shall notify the safe working load of each machine to engineer or his representative when ever he brings it to site of work and get it verified by the Engineer.
- 6) Motors, gearing, transmissions, electric wiring and other dangerous parts of the hosting appliance shall be provided with efficient safe guards. Adequate permutations shall be taken to reduce the minimum risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electric installations which are already energized, installing g mats, working Apparels such as gloves, sieves and ready energized, insulating mats, working appeared such as gloves, etc. as may be necessary., shall be provided. Workers shall not wear any rings, watches and carry keys or other materials which are good conductor of electricity.
- 7) All ladders and other device mentioned or described herein shall be maintained in a safe conditions and no ladder or equipment's shall be altered or removed while itb is in use. Adequate washing facilities shall be provided at or near places of work.

Clause 128.1 Measuement of Payment

No separate payment shall be made for any work included in this clause and the clause shall be deemed to be included lump sum Contract price.

Clause 129 CONTRACTORS FACILITY

The contractor, shall provide and maintain such office, stores, workshops Latrines, housings and mess accommodations as necessary, These shall be located in the contractors compound , distinct and separate from the engineer's compound. The locations, dimensions and layout of such buildings and places shall be subjected to the approval of the Engineer- In- Charge. The Contractor shall not ings or structures on the Site without the specific permission in writing of the Engineer including approval of the dimensions of such buildings or structures. Before the commencement of the Period of Warranty, the Contractor shall fence off the Contractor's ore area from the rest of the Site. By the end of the Period of Warranty, the Contractor shall remove this fence and all buildings shall be cleared and the area shall be graded as required by the Engineer in charge.

Clause 129.2 Housing for Labours

The contractor shall be provided and maintain at his own expense living accommodation and amenities for all staff and labour employed by him directly or indirectly with the project, except for those recruited from immediate vicinity of the work. Each building for living accommodation shall be provided with lights, water supply (both for drinking and other purposes), efficient sanitation and refuse disposal system, cooking areas and equipment, and appropriate furnishings to the satisfaction of the Engineer. All living accommodation shall be maintained in a

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clean and sanitary condition at all times. Except for shelters for watchmen, informal tented camps along the road shall not be permitted.

Clause 129.3 Land required for the works

The land available to the contractor free of charge shall be that to be occupied by the parent works. It is the responsibility of the employer to ensure that land is made available and in the event of objections being raised by the current occupiers or users, the contractors shall immediately report the circumstances to the engineer.

All necessary negotiations, agreements and payments for additional land for whatever purpose shall be the responsibility of the Contractor.

The Contractor shall indemnify the Employer and the Engineer against any claims or proceedings resulting from the occupancy and use of such areas of additional land.

Clause 129.4 Temporary Structures and facilities

Acquisitions of rights to land for the Contractors temporary facility shall be the responsibility of then contractors. The Employer reserves the right to requested copies of original agreement with any land owner.

Unless alternative arrangements are agreed, at the time when no longer required all temporary facilities shall be removed and the land shall be restored by the Contractor in accordance with Clause 129.6 of these Special Provisions.

The Contractor shall indemnify the Employer and Engineer against any claim or proceeding's resulting from the occupancy and use of such areas of additional land.

Along certain sections of the alignment of the road, restrictions exist on placing or locating camps, temporary plant and facilities, for environmental reasons, This does not apply to the area of the right-of-way or the permanent structures.

Clause 129.5 Transport of Contractors Equipments and Material

Where the contractor intends to use a particular routes for the haulage of large quantities of the materials shall be consult well in advance with any effected communities and submit in advance for the engineers approval a plan including but not limited to the proposed route, the existing conditions of the pavement and bridges, the estimated number and type of the vehicles movement per day, a programme for monitoring the conditions of the pavements and structures and measures for limiting vehicles speed and dust resistance of the built up areas.

The Engineer reserves the right to disallow certain haul routes should these in his open cause or be likely to cause unreasonable nuisance or hazards to the public.

The Engineer's approval will not remove the Contractor's obligations under Clause 30.2 of the General Conditions of Contract to prevent and repair damage to roads or his liability for compensation for any accidents caused by his vehicles.

Clause 129.6 Clearance of Contractors Facility and Reinstatement of Land

On completion of construction works, the contractor shall clear away all his temporary facilities including but not limited to offices, camps, storage and holding yards, workshops, crushing and mixing plants, diversion and haul roads so that the

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lands is returned to at least previous conditions and in the case of agricultural land potential productivity. Clearance and reinstatement shall include but not be limited to tasks such as the removal and disposal of all wastes, disinfecting of sewage disposal systems, demolition and removal of unwanted structures, removal of metallic and concrete debris, removal and disposal of any soil contaminated by diesel, bitumen or other polluting material, ripping to relieve compaction, grading, replacement of topsoil, and establishment of vegetative cover, as appropriate or as directed.

Where improvements have been made such as land filling or installation of boreholes or construction of buildings these may be retained subject to the agreement of the land Owner.

The employer reserve the rights to inspect the site of any facilities establishment or used by the contractor in connection with the works and to undertake any corrective measures necessary to reinstate the land, and to recover the cost from monies due or to become due to the contractors.

Clause 129.7 Measurements for Payment

No separate payment shall be made for any work included in this Clause and the costs shall be deemed to be included in the rates of the relevant items entered in the Contract Price.

Clause 130 HEALTHS AND SAFETY PLAN

Clause 130.1 Health and Safety Plan

Within one month of his arrival on site the Contractor shall submit a Health and safety Plan, for the employees of the Contractor, with operational details of his proposals to the Engineer-in-charge for his approval.

Clause 130.2 Accident Prevention Officer; Accidents

Due precautions shall be taken by the Contractor, at his own cost, to ensure the safety and protection against accidents of all staff and labour engaged on the Works, local residents in the vicinity of the Works, and the public travelling through the Works.

The Contractor shall deploy at Site a designated full-time officer qualified to promote and maintain safe working practices. This officer shall have authority to issue instructions and shall take protective measures to prevent accidents, including but not limited to the establishment of safe working practices and the training of staff and labour in their implementation.

Technical Specifications The Contractor shall be responsible for all costs including medical treatment, transport, accommodation etc. incurred by any member of the public or his labour force whether on direct contract or sub-contract as a result of injuries or illness arising from the execution of the Works.

Clause 130.3 Protective Clothing and Safety Equipment

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The Contractor shall at his own expense provide protective clothing and safety equipment to all staffs and labourers engaged on the Works to the satisfaction of the Engineer-in-charge. Such clothing and equipment shall include, at a minimum, high visibility vests for workers directing traffic, protective footwear for workmen undertaking concrete mixing work, protective footwear and gloves for any workmen performing bituminous paving works, protective footwear, safety glasses or goggles and filter masks for workmen undertaking screening or crushing or grinding, protective footwear and hard hats for workmen engaged on bridge construction and in all locations subject to rock fall, ear-protectors for workmen engaged in rock-drilling, safety ropes and harness for workmen engaged on slope protection, and otherwise as appropriate to the job in hand and to the Engineer's satisfaction.

If the Contractor fails to provide such clothing and equipment the Employer shall be entitled to provide the same and recover the cost from the Contractor.

Necessary group Insurance to be provided for safeguard of labours.

Clause 130.4 Medical and First-Aid Facilities

The Contractor shall provide and maintain throughout the duration of the Contract, a medical examining room and sick bay together with all necessary supplies and equipment to be sited in the Contractor's main camp. The rooms shall be used exclusively for medical purposes and shall be of good quality construction with electric lighting and otherwise suitable for their purpose. The sick bay shall have at least two beds, and shall be provided with adjacent washing and sanitation facilities. The Contractor shall employ permanently on Site at least one fully trained medical aide, nurse or paramedic who shall be engaged solely for medical duties.

The Contractor shall provide first aid equipment at all camps and work sites to the satisfaction of the Engineer-in-charge, and shall ensure that at all camps and work sites where 20 or more persons are engaged on the Works there shall at all times be a person qualified in first-aid with access to appropriate first-aid equipment.

The location of the medical room and other medical and first-aid arrangements shall be made known to all employees by posting suitable notices at prominent locations around the site and by verbal instruction upon recruitment.

The Contractor's arrangements for complying with this Section shall be subject to the approval of the Engineer-in-charge and also to the approval of any qualified Medical Officer designated by the Government to inspect or supervise medical arrangements on the Site.

Cause 130.5 Supply of Drinking Water, Sanitation

The Contractor shall provide on the Site and at his expense an adequate supply of drinking water for all staff and labour engaged on the Works, together with sanitary facilities (portable toilets or latines), to the satisfaction of the Engineer-in-charge. The Contractor shall thoroughly disinfect and fill all latrine pits, sumps and trenches when no longer required.

Clause 130.6 Measurements for Payment

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No separate payment shall be made for any work included in this Clause and the costs shall be deemed to be included in the rates of the relevant items entered in the Contract price.

SPECIAL SPECIFICATIONS
200 SITE CLEARANCE

Clauses 201 CLEANING AND GRUBBING

Caluses 201.1 Scope

This work shall consist of cutting, removing and disposing of all materials such as trees, bushes, shrubs, stumps, roots, grass, weeds, top organic soil not exceeding 150 mm in thickness, rubbish etc., which in the opinion of the Engineer are unsuitable for incorporation in the works, from the area of road land containing road embankment, drains, crossdrainage structures and such other areas as may be specified on the drawings or by the Engineer. It shall include necessary excavation, backfilling of pits resulting from uprooting of trees and stumps to required compaction, handling, salvaging, and disposal of cleared materials with all leads and lights. Cleaning and grubbing shall be performed less than one month in advance of earth work operation and in accordance with the requirements of the se specifications. If any vegetation grows after cleaning and grubbing and before earth works. The contract5or shall repeat the work to the satisfaction to the engineer in charge without extra cost.

Caluses201.4 Disposal of Materials

All materials arising from clearing and grubbing operations shall be taken over and shall be disposed of by the Contractor with all leads and lifts. Removal unserviceable rubbish, earth, etc. from the working site and disposal of the same beyond the working site in conformity with municipal/corporations rules for such disposal loading into truck and cleaning the site aall respect as per direction of Engineer in charge

Clause 201.5 Measurments for Payments

For the purpose of cutting of trees and removal of roots and stumps, the girth shall be measured at a height of 1 meter above ground or at the top of the stump if the height of the stump is less than one meter from the ground, trimming of branches of trees extending above roadway shall be considered incidental to the cleaning and grubbing operations and no separate payments shall be made for same.

Clause 201.6 Rates (All rates included within the contract price)

Clause 201.6.1

The Contract unit rates for the various items of clearing and grubbing shall be payment in full for carrying out the required operations including full compensation for all labour, materials, tools, equipment and incidentals necessary to complete the work. These will also include removal of stumps of trees less than 300 mm girth excavation and back-filling to required density, where necessary, and handling, giving credit towards salvage value disposing of the cleared materials with all lifts

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and leads. Ground levels shall be taken prior to and after clearing and grubbing. Levels taken prior to clearing and grubbing shall be the base level and will be accordingly used for computation of quantity of material arising due to clearing and grubbing, including the computation of unsuitable material, if any, which may be required to be removed as per the approval of the Engineer in charge. The levels taken subsequent to clearing and grubbing shall be the base level for computation of earthwork for embankment. Clearing and grubbing shall be restricted to 150 mm only for payment purpose. Where clearing and grubbing is done a level beyond 150 mm, as per to site consideration, as directed by the engineer in charge, the extra quantity shall be measured and paid separately.

Clause 201.6.2

The Contract unit rate for cutting trees of girth above 300 mm shall include handling, giving credit towards salvage value disposing of the cleared materials upto lead of 1000 meter.

**Clause 202 DISMANTLING CULVERTS, BRIDGES AND OTHER STRUCTURE
PAVEMENTS AND GRUBBING**

Clause 202.3 Dismantling Pavement and other structures.

Add the following at the end of this clauses.

“In removing bituminous layer(s) complete or up to design depth from top of the pavement as shown in the drawings or directed by the engineer-in-charge adequate care shall be taken during removal process do that there is no damage to the under laying layer(s) retained.

In removing wearing coat from the over bridge /culvert desk slab adequate care shall be taken during wearing coat removal so that there is no damage to the retained structural deck slab, The wearing coat shall be removed Technical Specifications oved up to the top of deck structural slab. The deck surface shall be cleared of all loose sticking wearing coat materials.

All the removed materials shall be stockpiled at designated locations if the material is to be used later or otherwise arranged for disposal as directed (see Clause 202.5).

Clause 202.6 Measurements for Payment

No separate payment shall be made for any works included in these clause

Clause 202.7 Rates

Delete the last sentence of the first paragraph and replace with:

These will also include excavation and back filling where necessary to the required Compaction and for handling, piling and disposal of the dismantled materials with all lifts and leads as specified in Sub-Clause 202.5. The cost of cartage of materials with no sal vage value to disposal sites (acceptable by the Engineer /Local body) is deemed to be included within the contract price.

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SPECIAL SPECIFICATION

300 EARTHWORKS AND DRAIN

Clause 301 EXCAVATION FOR ROADWAY AND DRAINS

Clause 301.3.3 Excavation – General:

All excavations shall be carried out in conformity with the directions laid here-in-under and in a manner approved by the Engineer in charge. The work shall be so done that the suitable materials available from excavation are satisfactorily utilized as decided upon beforehand and suitable credit towards the cost of re-usable material and salvage value of unsuitable material shall be given by the Contractor while quoting the rates.

While planning or executing excavations, the Contractor shall take all adequate precautions against soil erosion, water pollution etc. as per Clause 306, and take appropriate drainage measures to keep the site free of water in accordance with Clause 311.

The excavations shall conform to the lines, grades, side slopes and levels shown on the drawings or as directed by the Engineer in charge. The Contractor shall not excavate outside the limits of excavation. Subject to the permitted tolerances, any excess depth/width excavated beyond the specified levels/dimensions on the drawings shall be made good at the cost of the Contractor with suitable material of characteristics similar to that removed and compacted to the requirements of Clause 305.

All debris and loose material on the slopes of cuttings shall be removed. No backfilling shall be allowed to obtain required slopes excepting that when boulders or soft materials are encountered in cut slopes, these shall be excavated to approved depth on instructions of the Engineer and the resulting cavities filled with suitable material and thoroughly compacted in an appropriate manner.

Clause 301.3.4 Methods, tools and equipment :

Only such methods, tools and equipment as approved by the Engineer in charge shall be adopted/used in the work. If so desired by the Engineer in charge, the Contractor shall demonstrate the efficacy of the type of equipment to be used before the commencement of work. Recommended equipments for different materials are indicated in following table.

Type of Excavation	Recommended equipments
Excavation in rock	Hydraulic excavator with rock breaker or Jack hammer operated with air compressor
Marsh excavation	Slurry pump and hydraulic excavator
Removal of earth	Hydraulic excavator
Small excavation	Backhoe loader

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Areas where vibrations are prohibited	Silent cracking
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Clause 301.3.7 Excavation of road shoulders/verge/median for widening of pavement or providing treated shoulders :

This clause shall read as under:

In the works involving widening of existing pavements or providing paved shoulders, the existing shoulders/verge/median shall be removed to its full width and up to top of the subgrade. The subgrade material within 500m m from the bottom of the pavement crust for the widened portion or paved shoulders shall be loosened and re-compacted as per Clause 305.

While doing so, care shall be taken to see that no portion of the existing pavement designated for retention is loosened or disturbed. If the existing pavement gets disturbed or loosened, it shall be dismantled and cut to a regular shape with sides vertical and the disturbed/loosened portion removed completely and re-laid as directed by the Engineer, at the cost of the Contractor.

Clause 301.3.11 Disposal of excavated materials:

All the excavated materials shall either be reused with the approval of the Engineer in charge or disposed of with all leads and lifts upto 5000 m as directed by the Engineer in charge. Rates quoted by the Contractor deemed to include credit for usable material and salvage value of unusable materials

301.6 Preparation of Cut Formation

The cut formation, which serves as a sub-grade, shall be prepared to receive the sub base/base course as directed by the Engineer in charge.

Where the material in the subgrade (i.e. within 500 mm from the lowest level of the pavement crust) has a density less than specified in Table 300-1, the same shall be loosened to a depth of 500 mm and compacted in layers in accordance with the requirements of Clause 305. Any unsuitable material encountered in the subgrade level shall be removed as directed by the Engineer, replaced with suitable material and compacted in accordance with Clause 305.

In rocky formations, the surface irregularities shall be corrected and the levels brought up to the specified elevation with granular base material as directed by the Engineer, laid and compacted in accordance with the respective Specifications for these materials. The unsuitable material shall be disposed of in accordance with Clause 301.3.11. After satisfying the density requirements, the cut formation shall be prepared to receive the sub-base/ base course in accordance with Clauses 310 and 311.

Clause: 301.8 Measurements for Payment

No separate measurements shall be made for any works included in this clause.

Clause 301.9 Rates ((All rates included within the contract price)

Clause 301.9.1

Delete sub-paragraph (ii) of clause 301.9.1 and substitute :-

- (ii) excavating the materials , transporting and the excavating materials and disposing the same on the sites of the embankments, spoils bank or stacking as directed within all lifts and lead upto500om or otherwise specified by the engineer in charge.

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Add the following after item(vii):-

(viii) the removal from site and disposal of all surplus or unsuitable materials obtained from the excavation operations, which in the opinion of the engineering in charge cannot be used in the works shall be included in the contract price.

Clause 301.9.2

The Contract unit rate for loosening and re-compacting the loosened materials at subgrade shall include full compensation for loosening to the specified depth, including breaking clods, spreading in layers, watering where necessary and compacting to the requirements. The volume of the soil excavated and then spread in the excavation shall not be measured for payments.

Clause 301.9.4

The Contract unit rate for item of preparing rocky sub-grade as per Clause 301.6 shall be full compensation for providing, laying and compacting granular base material for correcting surface irregularities including all materials, labour and incidentals necessary to complete the work and 5000m leads and lifts.

Clause 301.9.5

The Contract unit rate for the items of stripping and storing topsoil and of reapplication of topsoil shall include full compensation for all the necessary operations including 5000m lifts and leads.

Clause 304 EXCAVATIONS FOR STRUCTURES

Clause 304.3.4 Preparation of foundation :

The bottom of the foundation shall be levelled both longitudinally and transversely or stepped as directed by the Engineer. Before footing is laid, the surface shall be slightly watered and rammed. In the event of excavation having been made deeper than that shown on the drawings or as otherwise ordered by the Engineer in charge, the extra depth shall be made up with concrete or masonry of the foundation at the cost of the Contractor as per Clause 2104.1. Ordinary filling shall not be used for the purpose to bring the foundation to level.

When rock or other hard strata is encountered, it shall be freed of all soft and loose material, cleaned and cut to a firm surface either level or stepped as directed by the Engineer. All seams shall be cleaned out and filled with cement mortar or grout to the satisfaction of the Engineer in charge. In the case of excavation in rock, annular space around footing shall be filled with lean concrete M 15 upto the top level of rock.

If the depth of fill required is more than 1.5 m above the top of the footing, filling upto 1.5 m above top of footing shall be done with lean concrete M 15 followed by boulders grouted with cement.

When foundation piles are used, the excavation of each pit shall be substantially completed before beginning pile-driving operations therein. After pile driving operations in a given pit are completed, all loose and displaced materials therein shall be removed to the elevation of the bottom of the footings.

Clause 304.5 Rates (All rates included within the contract price)

Clause 304.5.1

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Delete subparagraph (ii) and substitute:

(ii) excavation of the materials and the construction of necessary cofferdams, cribs\sheeting, shoring and bracing, dewatering and protection due to stream flow, seepage , spring rain or other reasons the contractor shall take adequate measures such as billing out, pumping, constructing diversion channel, drainage channel bunds, cofferdams and other necessary works to keep the foundation trenches dry when so required and to protect green concrete / masonry against damage by erosion or certain rising the water level and their subsequent removal, No extra payment will allowed in this regards.

Clause 305 EMABANKMENT CONSTRUCTION

Clause 305.1.1 Description :

These Specifications shall apply to the construction of embankments including sub-grades, earthen shoulders and miscellaneous backfills with approved material obtained from approved source, including material from roadway and drain excavation, borrow pits or other sources. All embankments sub-grades, earthen shoulders and miscellaneous backfills shall be constructed in accordance with the requirements and as per direction of engineer in charge.

Clause 305.2.1.2

Expansive clay exhibiting marked swell and shrinkage properties (“free swelling index” exceeding 50 percent when tested as per IS:2720 – Part 40) shall not be used as a fill material. Where an expansive clay having “free swelling index” value less than 50 percent is used as a fill material, subgrade and top 500 mm portion of the embankment just below sub-grade shall be non-expansive in nature.

Clause 305.2.1.5

Ordinarily, only the materials satisfying the density requirements given in following Table shall be employed for the construction of the embankment and the sub-grade.

Density Requirements of Embankment and Sub-grade Materials

Sl no.	Type of Work	Maximum laboratory dry unit weight when tested as per IS:2720 (Part 8)
1	Embankments up to 3height, not subjected to extensive flooding	Not less than 16 kN/cum
2	Embankments exceeding 3 m height or embankments of any height subject to long periods of inundation	Not less than 17 kN/cum
3	Subgrade and earthen shoulders/verges/backfill	Not less than 18 kN/cum

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- Notes: 1) This Table is not applicable for lightweight fill material, e.g., cinder, pond ash, etc.
2) The Engineer may relax these requirements at his discretion taking into account the availability of materials for construction and other relevant factors.
3) The material to be used in subgrade should also satisfy design CBR at the dry unit weight applicable as per above table.

Clause 305.2.2.2 Borrow materials:

No borrow area shall be made available by the Employer or Engineer in charge. The arrangement for the source of supply of the material for embankment and sub-grade complying with the guidelines as well as compliance to environmental requirements in respect of excavation and borrow areas as stipulated, from time to time by the Ministry of Environment and Forests, Government of India and the local bodies, as applicable shall be the sole responsibility of the Contractor

Substitute the last sentence of the paragraph 7 with the following:-

It shall be ensured that the subgrade material when compacted to the density requirements as in clause 903.2.2 shall yield the design CBR value of the sub-grade.

Paragraph of this clause, appearing below table-300-3, shall be read under;

The Contractor shall at least 7 working days before commencement of compaction submit the following to the Engineer for approval:

- i) The values of maximum dry density and optimum moisture content obtained in accordance with IS:2720 (Part 8), appropriate for each of the fill materials he intends to use.
- ii) A graph of density plotted against moisture content from which each of the values in (i) above of maximum dry density and optimum moisture content were determined.
- iii) The dry density –moisture content –CBR relationship for light, intermediate and heavy comp active efforts (light corresponding to IS:2720(Part 7)) heavy corresponding to IS ;2720(Part8) and intermediate in between the two for each of the fill material s he intends to use in the subgrade.

Once the above information has been approved by the engineer in charge , it shall from the basis for compaction.

Clause 305.3 Construction Operations

Follow the MORTH revision 5 specification.

Clause 305.3.4 Compacting ground supporting embankment/Sub-grade.

Add the following at the end of Paragraph 2.

“should be such improvement be necessary to a depth below original ground level greater than 300 mm, then to facilitate compaction of the ground/sub-grade to the relative compaction specified in Clause 903.2.2, the following procedure shall be applied:

- (i) remove the upper 300 mm part of the ground/sub-grade,
- (ii) Loosen, add water as necessary, and compact in-situ the remaining part of the ground/sub-grade to the requirements of Clause 305, and
- (iii) Replace the excavated soil by spreading, watering as necessary and compacting in accordance with Clause 305.

Clause 305.3.6 Compaction

The second paragraph of this Clause shall read as under:

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"The compaction shall be done with the help of vibratory roller of not less than 80-100 KNs atic weight with plain or pad foot drum."

Clause 305.4 Construction of Embankment and Subgrade under Special Conditions

Follow the MORTH revision 5 specification.

Clause 305.4.3 Earth work over existing road surface.

Replace item (i) with:

The existing road surface is of a bituminous type and lies more than 500 mm below formation level, the same shall be scarified to a depth of 50 mm below the underside of die bitumen, or more if specified, so as to provide an ample bond between the old and new material where existing road surface is less than 500 mm below formation level, the exist shall be prepared overlays in accordance with Clause 401.4.1.

Clause 305.4.4 Embankment and sub-grade around structures

Add the following at the following:-

The thickness of the filter medium lay behind abutments, wing walls, return walls and head walls of bridges and culverts, or behind any retaining wall, shall be at least 600mm.

Clause 305.9 Rates

(All rates are included within the cost of contact)

Clause 306 SOIL EROSION AND SEDIMENTATION CONTROL

Follow the MORTH revision 5 specification.

Clause 306.4 Measurement of Payment

All temporary sedimentation and pollution control works shall be deemed as incidental to the earthwork and other items of work and as such no separate payment shali be made for the same. No separate payment shall be made for any work included in this clauses.

Clause 309 SURFACE/SUB-SURFACE DRAINS

Clause 309.1

The work shall consist of constructing lined or unlined surface drains, sub-surface drains and catch pits and inlets in accordance with the requirement of the specifications and to the lines, grades, dimensions and other particulars shown on the drawing or as directed by the Engineer.

Follow the MORTH revision 5 specification.

Clause 309.2 Surface Drains

Add the following at the end of this Clause: "The surface drains shall be of the following basic types:

- (1) Kutcha (Unlined) drain
- (2) Pucca (Lined/Brick/RCC) drain"

Follow the MORTH revision 5 specification.

Clause 309.2.1 Kutcha Drains

Unlined drain shall be constructed by excavating and finishing as per Technical Specification Clause 301 to the required levels, grades, levels and dimensions as Shown in the drawing or as directed by the Engineer in charge.

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Follow the MORTH revision 5 specification

Clause 309.2.2 Pucca Drains

Pucca drain shall be constructed to the lines, grades, levels and dimensions and with the materials as shown in the drawing or as directed by the Engineer as per Technical Specification Clauses 1300, 1500, 1600 and 1700 as applicable.

Follow the MORTH revision 5 specification

Clause 309.2.3 CONCRETE SLAB COVER FOR RECTANGULAR DRAIN.

Concrete slabs for covering rectangular drains in urban areas shall be as per the drawings or as approved by the Engineer in charge.

Follow the MORTH revision 5 specification.

Clause 309.2.4 Catch pit and chutes

Catch pit and chutes for longitudinal drainage shall be constructed as per lines, grades and dimensions and with the materials as shown in the drawing and/or as directed by the Engineer and as per Technical Specification Clause 1700. The work shall be done in proper sequence along with the surface drain. They shall be as per the lines and grades and built with the materials shown in drawings or as directed by the Engineer and as per Technical Specification Clauses 1400 and 1700 as applicable.

Follow the MORTH revision 5 specification.

Clause 309.4 Measurements for Payment

No separate payment shall be made any clause for any work included in this clause.

**SPECIAL SPECIFICATION
400 NON-BITUMINOUS BASES AND SUB-BASES**

Clause 401 GRANULAR SUB-BASE

Clause 401.1 Scope

Add the following at the end of the clauses:

A site trial shall be performed as per the MORTH revision 5 specification.

Follow the MORTH revision 5 specification.

Clauses 401.2.1 Materials

The material to be used for the work shall be natural sand, morum, gravel, crushed e crushed laterite' stone or combination thereof depending upon the grading required. The. material shall.be free-from organic or other deleterious constituents and conform to Grading I given in for upper sub-base and hard shoulder and Grading I for lower sub base as drainage layer.

Clause 401.3 Strength of sub-base

"The materials for sub-base and hard shoulder shall have a minimum CBR of 30% tested in a soaked condition in the samples at 98% of accordance with IS: 2720 (Part 16) after preparing maximum dry density and optimum moisture content corresponding to S: 2720 (part 8) and soaking the same in water for 4 days. In preparation of samples for CBR testing, all coarse material retained on the 19 mm sieve shall be removed and weighed dry. An equal weight of dry material passing the 19 mm sieve but retained on a 4.75 mm sieve shall be substituted."

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Follow the MORTH revision 5 specification

Clause 401.4.2 Spreading and compacting

"The sub-base material shall be placed on the sub-grade in a uniform layer or layers not exceeding 200 mm thickness for a single layer after compaction."

Replace paragraph 2 of this Clause with the following: "When the sub-base material consists of a combination of materials mentioned in Clause 401.2. 1, the material shall be batched by weight or volume and mixed in a GSB mixing plant or other mechanically powered mixing plant approved by the Engineer in charge. The resulting materials shall be homogeneous and their physical requirements shall conform entirely to the specifications of Clause 401.2.2.

The fifth paragraph of this Clause shall read as under:

"Immediately thereafter, rolling shall start. Compaction shall be done with a vibratory roller of minimum 80 to 100 kN static weight with plain drum or pad foot-drum or heavy pneumatic tyre roiler of minimum 200 to 300 KN weight having a minimum tyre pressure of 0.7 MN/m or equivalent capacity roller capable of achieving the required compaction. Rolling shall commence at the lower edge and proceed towards the upper edge longitudinally for portions having unidirectional cross fall and super-elevation and Shall commence at the edges and progress towards the centre of portions having cross fall on both sides.

"In the last paragraph, replace the first sentence with:

Compacting shall be continued till the density achieved over the full thickness of material laid satisfies the requirements of Clause 903.3."

Follow the MORTH revision 5 specification

Clause 401.8 Rates

(No separate payment shall be made any clause for any work included in this clause.)

Clause 406 WET MIX MACADAM SUB-BASE/BASE

Follow the MORTH revision 5 specification.

Clause 406.9 Rate

(No separate payment shall be made any clause for any work included in this clause.)

Clause 408 SHOULDERS, ISLANDS AND MEDIANS

Follow the MORTH revision 5 specification.

Clause 408.7 Rate

(No separate payment shall be made any clause for any work included in this clause.)

Clause 409. CEMENT CONCRETE KERB AND KERB WITH CHANNEL

Follow the MORTH revision 5 specification.

Clause 409.7 Rate

No separate payment shall be made any clause for any work included in this clause.

SPECIAL SPECIFICATION
500 BITUMINOUS BASES AND SURFACE COURSES

Clause 501 GENERAL REQUIREMENTS FOR BITUMINOUS PAVEMENT LAYERS

Follow the MORTH revision 5 specification.

Clause 501.8.8 Rates(No separate payment shall be made any clause for any work included in this clause.)

Clause 502 PRIME COAT OVER GRANULAR BASE

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Follow the MORTH revision 5 specification.

Clause 502.8 Rates

(No separate payment shall be made any clause for any work included in this clause.)

Clause 504 BITUMINUS MACADAM

Follow the MORTH revision 5 specification.

Clause 504.8 Rates

(No separate payment shall be made any clause for any work included in this clause.)

Clause 505 DENSEBITUMINUS MACADAM

Follow the MORTH revision 5 specification.

Clause 505.9 Rates

(No separate payment shall be made any clause for any work included in this clause.)

Clause 507 BITUMINUS CONCRETE

Follow the MORTH revision 5 specification.

Clause 507.9 Rates

(No separate payment shall be made any clause for any work included in this clause.)

**SPECIAL SPECIFICATION
800 TRAFFIC SIGNS, MARKING, OTHER APPURTENANCES**

Clause 800 TRAFFIC SIGNS, ROAD MARKINGS ETC.

Clause 801 TRAFFIC SIGNS.

Follow the MORTH revision 5 specification.

Clause 800.1.1

All road signs shall be of retro-reflectorized type and made of enclosed lens / encapsulated lens / micro-prismatic type reflective sheeting vide Clause 801.3, fixed over a substrate vide Clause 801.2.5 of MORTH revision 5 Specifications

Clause 803 ROAD MARKINGS

Follow the MORTH revision 5 specification.

**SPECIAL SPECIFICATION
900 QUALITY CONTRAL FOR ROAD WORKS**

Clause 900 QUALITY CONTRAL FOR ROAD WORKS

Follow the MORTH revision 5 specification.

Clause 900.1

No separate payment shall be made any clause for any work included in this clause.

**SPECIAL SPECIFICATION
1000 MATERIALS FOR STRUCTURE**

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Clause 1006 CEMENT

Follow the MORTH revision 5 specification.

Clause 1007 WATER

Follow the MORTH revision 5 specification

Clause 1006 STORAGE OF MATERIAL

Follow the MORTH revision 5 specification

Clause 1009 AGGREGATES

Follow the MORTH revision 5 specification

**SPECIAL SPECIFICATION
1500 FORMWORK**

Clause 1500 FRAME WORKS

Follow the MORTH revision 5 specification.

Clause 1500.1

No separate payment shall be made any clause for any work included in this clause.

**SPECIAL SPECIFICATION
1600 STEEL REINFORCEMENTS**

Clause 1600 STEEL REINFORCEMENT WORKS

Follow the MORTH revision 5 specification.

Clause 1600.1

No separate payment shall be made any clause for any work included in this clause.

**SPECIAL SPECIFICATION
1700 STRUCTURAL CONCRETE**

Clause 1700 STRUCTURAL CONCRETE WORKS

Follow the MORTH revision 5 specification.

Clause 1700.1

No separate payment shall be made any clause for any work included in this clause.

**SPECIAL SPECIFICATION
1800 PRESTRESSING**

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Clause 1800 PRESTRESSING

Follow the MORTH revision 5 specification.

Clause 1800.1

No separate payment shall be made any clause for any work included in this clause

SPECIAL SPECIFICATION

2000 BEARING

Clause 2000 BEARING

Follow the MORTH revision 5 specification.

Clause 2000.1

No separate payment shall be made any clause for any work included in this clause

SPECIAL SPECIFICATION

2200 SUB-STRUCTURE

Clause 2200 SUB-STRUCTURE

Follow the MORTH revision 5 specification.

Clause 2200.1

No separate payment shall be made any clause for any work included in this clause

SPECIAL SPECIFICATION

2400 SURFACE AND SUB SURFACE GEOTECHNICAL INVESTIGATION

Clause 2400 SURFACE AND SUB SURFACE GEOTECHNICAL INSVESTIGATION

Follow the MORTH revision 5 specification.

Clause 2400.1

No separate payment shall be made any clause for any work included in this clause.

SPECIAL SPECIFICATION

2600 EXPANSION JOINTS

Clause 2600 EXPANSION JOINTS

Follow the MORTH revision 5 specification.

Clause 2600.1 RATE

No separate payment shall be made any clause for any work included in this clause

SPECIAL SPECIFICATION

2700 WEARING COAT AND APPURTENANCES

Clause 2700 WEARING COAT AND APPURTENANCES

Follow the MORTH revision 5 specification.

Clause 2700.1 RATE

No separate payment shall be made any clause for any work included in this clause

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**SPECIAL SPECIFICATION
3000 MAINTENANCE OF ROAD**

Clause 3000 MAINTENANCE OF ROAD

Follow the MORTH revision 5 specification.

Clause 3000.1 RATE

No separate payment shall be made any clause for any work included in this clause.

**SPECIAL SPECIFICATION
3100 REINFORCED EARTH**

Clause 3100 REINFORCED EARTH

Follow the MORTH revision 5 specification.

Clause 3100.1 RATE

No separate payment shall be made any clause for any work included in this clause.

**ANNEXURE-I
ADDITIONAL TECHNICAL SPECIFICATION
SECTION: A**

1.0 PVC RIGID PIPES

1.1 The PVC rigid pipes used as storm water drainage or conduits under footpath, kerb or median of bridges and structures shall conform to IS: 4985-latest version, suitable to sustain a working pressure of 4.0 kgflsq.cm

1.2 Measurement for Payment.

No separate measurement for any payment shall be made.

1.3 Rate

All materials for this purpose should be arranged by the contractor and no separate payment on this account will be paid.

SECTION: B

1.0 UNDERGROUND DRAINAGE AND APPURTENANCES

1.1 Underground drain

1.1.1 SCOPE

The work comprise of providing surface water drainage facility for the project road including junctions, urban areas, super-elevated stretches and other area shown in the drawing.

The work consists of burnishing and installation of
Sewer pipes
Road gullies/catch pit
Manholes

The above shall be of the type, diameter, length required at the location shown in the drawing or instruction by the engineer-in-charge and accordance with the requirement of the specification.

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1.1.2 Materials

All materials and manufactured items supplied for the incorporation of the works shall be of new, good quality and sound workmanship and shall be obtained only from approved suppliers who, if so required by the engineer in charge. through the Contractor, shall demonstrate to the satisfaction of the Engineer-in-charge that the materials and manufactured items they offer or have supplied for the works are suitable in all respects for the required duty and comply with requirement of the specifications.

1.1.3 Quality Assurance

The contractor shall refer to and comply with the relevant standards, specifications, and codes governing the contract in order to achieve good results. The contractor shall also comply with the regulations issued by PWD, PHED and local authority.

1.1.4 Drawings and Documents.

The locations, types and flow direction have generally been indicated in the Drawing. Contractor shall prepare a detailed working drawing and shall submit to Engineer for approval.

1.2 Examination of Works Before Covering up

No work shall be covered up or put out of view without the approval of the Engineer in-charge. Contractor shall afford full opportunity for the Engineer-in-charge for examination and measurement.

1.3 Technical Specification

1.3.2 Excavation (including Trench Excavation)

This specification is to be read in conjunction with section 301 and 309 of the Technical specification.

1.3.1 Support and Protection of Excavations

Excavations shall be adequately supported by shoring, if required at all times, to the satisfaction of the Engineer-in-charge to prevent any ground movement causing injury or delay or endangering services, structure or road surfaces.

1.3.2 Bedding Materials and Backfilling

Bedding materials and backfilling materials shall be as approved by Engineer-in-charge. Trenches shall be backfilled in layers immediately after the pipes have been laid and the jointing material has hardened.

1.3.3 Form Work

This specification shall conform to section 1500 of the Technical Specification

1.3.4 Concrete

This specification shall conform to Section 1700 of the Technical Specification

1.3.5 Steel Reinforcement This specification shall conform to section 1900 of the Technical specification.

1.3.6 Supply of R.C. Pipe

The design and manufacturer of RCC modified class NP4 type pipe to be supplied shall conform to IS:458-1988 (third revision) and tested as per IS:3597:1985. The type of pipes shall be suitable for collar joints as per IS specifications.

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The contractor/supplier shall submit certified copies of test results for the materials and finished pipe units before acceptance of the same. In spite of submission of the certified copies at test results the Engineer reserves the right to test any of the materials and pipe units at contractor's/suppliers cost.

1.3.7 Laying of Reinforced Cement Concrete Sewer Pipes

The laying of R.C.C. Sewer pipes shall conform to IS:783-1985 with all amendments un to date. While unloading from trucks, pipes and fittings shall not be dropped loose on the ground and hard roads. Care should be taken to unload them on timber skids with steadying ropes so as not to allow the pipes bump hard against one another. To avoid damage to the pipes especially to the ends, it shall not be rolled or dragged along hard pavements or surfaces.

All lumps, blisters and excess coating materials shall be removed gently from the pipe surface and ends of each pipe shall be wiped, cleaned and dried before the pipe is laid. Before laying the pipes into the trenches each pipe shall inspect and provided with bituminous coating with paints conforming to IS:9862-1981 inside and dried.

Each pipe unit shall be handled and placed in position inside the trench properly and gently with the help of mechanical device only. Under no circumstances shall any pipe be dumped or rolled into the trench or be allowed to drop against the pipe already lying the trench.

1.3.8 Jointing of Reinforced Cement Concrete Sewer Pipes

After the pipes and fittings are laid into the trench the jointing its be done after thorough cleaning of the joint surface. The R.C.C sewer pipes are to be joined by collar Joint. The method of jointing shall conform to IS:783-1985.

1.3.9 Testing of Reinforced Cement Concrete Sewer Pipe Lines

After completion of the laying of sewer lines the same shall be tested as per IS:783 1985 before they are covered with backfill.

1.4 Construction of Manholes

Reinforced Cement Concrete manholes shall be provided at all the positions as shown on the Drawings. Apart from these, extra manholes may have to be built at locations as to be instructed by the Engineer-in-charge. These should generally conform S 4111 Part I) :1986 and shall be as per the Drawings.

The manholes are to be generally constructed directly over the center of sewer lines unless otherwise specified in the Drawings or directed by the Engineer-in-charge. The grade or reinforced cement concrete and plain cement concrete to be used in the structure of the manholes shall be as shown in Drawings. The inside face of the concrete of the manholes shall be finished with 19 mmn thick sand-cement plaster (3:1) with thixotropic chemical resistant epoxy protective coating on top, to be used as per manufacturer's specification. The manholes shall be provided with Reinforced Cement Polymer Concrete manhole covers and frames conforming to I.S. 12592 (Part 2) 1991. The manhole covers and frames shall be capable of bearing minimum 10 MT load and shall be procured from only such manufacturers as are capable to make arrangements for load testing in their laboratories as and when instructed by the Engineer-in-charge. Steps shall be provided for descending/ascending within the manholes as per Drawings and conforming to relevant I.S. Specifications.

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The entire height of the manholes shall be tested by closing both incoming and outgoing ends of the sewer and filling the manhole with water. A drop in water level not more than 50 mm per 24 hours shall be allowed. If the subsoil water is high it shall be ensured that there is no leakage of ground water into the manhole by observing the manhole 24 hours after emptying them.

After construction of manholes and making interconnections with main sewers and branch sewers including other incidental and ancillary works are completed, backfilling work shall commence immediately.

1.5 Constriction of Catch Pit / Road Gullies

Cement Concrete road gullies shall be provided at all positions shown on the Drawings. Apart from these, extra road gullies may have to be provided if instructed by the Engineer-in-charge. Construction of road gullies shall generally conform to IS:7740-1985 and shall be as per the Drawings. The road gullies shall be provided with Reinforced Polly elastomer grating fitted with Reinforced Cement Polymer Concrete frame having a load bearing capacity of minimum 35 MT with hinge arrangements for opening of the grating. The road gullies directly connected with the manholes shall be provided with cast iron siphons.

1.6 Measurements for Payment

No separate payment shall be made for any works included in this clause.

1.7 Rate

All rates are included within the Contract Price

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ELECTRICAL WORKS

TECHNICAL SPECIFICATIONS OF THE CONTRACT

Criteria of eligibility for submission of bid documents

1. Bidder must have submit Factory license documents details of OEM.
2. Bidder must have LT/MV/HT Contractor License approved by govt.
3. Bidder must have to submit lux design from the OEM incase of illumination of the entire bridge.
4. Manufacture/OEM must having proven experience of manufacturing, design, supply, installation experience in octagonal/circular/ GI/FRP poles/ High mast. Bidder/ manufacture must to be submitted manufacturing experience documents along with the tender.
5. Bidder must to be submit technical documents like structural stability calculation of poles considering suitable wind speed as per IS 875(Part-III).
6. **Bidder must be submitting following documents along with the tender technical bid.**
 - i) GAD of Pole along with MOC of poles as applicable.
 - ii) Technical data sheet of LED fixtures.
 - iii) Feeder pillar GAD.
 - iv) Latest wind tunnel test report .
 - v) Luminaries LM-79 & 80 reports, photo biological test report.
 - vi) Bidder must be submitting manufacturer warrantee certificate for LED fixture for 5 Years & Pole for 1 years in manufacturer letterhead.

1.0 Intent of the specification

1.1 This specification is intended to cover entire electrical installation works consisting of Installation of street light pole, LED luminaire, cable laying, CCTV camera system, Feeder pillars, specified here in after and all other ancillary item of works required for building up a completely efficient and trouble free electrical installation for Public utility.

1.2 This specification is also intended to test and commission the entire electrical installation and test operate all the equipments and accessories of the flyover in question as applicable and necessary at site of works, as per this technical specification including other terms, conditions and intents as specified in different sections of this document.

1.3 This specification is also covered for any item of works which may not have been mentioned here but is usual or necessary to complete this instant (street light) installation work shall be deemed to be included with this specification.

2.0 General requirement & Information for guidance to the tenderer

2.1 Requirement of drawing this specification is specifically meant for constructing / building up a complete street Light installation work as specified for the purpose of illumination of road.

2.2 The installation work of all electrical equipment under this specification shall be carried out only by an electrical firm, holding a valid license issued by the Government of West Bengal for carrying out installation work of the voltage classes involved, under the direct supervision of

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and by persons holding valid certificate of competency for the same voltage classes, issued by the state government.

2.3 The tenderer shall furnish with his tender the particulars of the license held by him for carrying out the entire electrical installation work against this specification.

2.4 The successful tenderer shall furnish to the purchaser the names and particulars of certificates of competency of supervisors and workers to be engaged for carrying out the entire electrical installation work against this specification.

3.0 Location of site

The work under this contract shall have to be undertaken by the successful bidders at KOLKATA, West Bengal.

4.0 Scope of Works

4.1. The job includes the SITC of below mentioned works but not limited to the following:
Complete supply, safe delivery at site and installation of (LED Luminaries, wiring from cable termination block to luminaries with single core 'FR' PVC insulated wire of flexible copper conductor of different sections (1100 V grade), earthing and connecting the equipment with earth electrode) or as specified in as required as in BOQ & as per direction of EIC.

Complete supply, safe delivery at site and fixing of LED Luminaries, lighting fixtures, Loop box, terminal Blocks, main Switch, MCB, Fuse Unit etc as required and as would be approved by the department during designing works including earth work as required and as per direction of EIC.

Complete supply, safe delivery at site and erection of (laying of cables, hoisting fixing of Luminaries crimping type lugs, terminal blocks, junction box, earth clamps, jointing and fixing materials including all consumables, all masonry works and mending good damages, electric and gas welding, fabrication of brackets, supports, hangers if required including supply of all steel materials, painting, testing and commissioning as required as per direction of EIC. It may be noted that the cost of such works shall be included in the offered rate and no extra cost for making of clamps, brackets would be measured separately and paid.

Complete supply installation of CCTV Camera system with all accessories.

Supply, delivery & installation of outdoor type IP65 protection LED Strep with driver.

Supply, delivery & installation of outdoor type IP65 protection Feeder pillar box with Timer, Contactor, SFU unit

Supply, delivery & installation of LED traffic signal aspect with control gear for blinker connected with solar panel, battery & accessories.

Complete supply, safe delivery at site and erection of all grounding materials for system grounding as required as in BOQ & as per direction of EIC

All mending good damages of the work if damaged by the contractor to finish the entire road to original finish and in good aesthetic appearance as required.

All painting works of the installation as required as in BOQ & as per direction of EIC

Any other works required to complete the work in all respect.

4.2 Successfully carrying out following acceptance tests at field on each equipments and accessories

- (a) Polarity of (Main) switches
- (b) Insulation Resistance Tests (of cable)

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- (c) Earth continuity tests
- (d) Earth resistance Tests

4.3 Successfully carrying out commissioning and test operation on each /random by putting the point on load. Arrangement of load test shall be the responsibility of the contractor.

4.4 The scope of work under this contract work shall also include but not limited to the following; -

(a) Taking delivery of departmental materials including their transport from the owner's store to the actual work site.

(b) Opening of equipments and accessories packing boxes where necessary, inspection and joint checking of stores with packing list for their completeness and condition along with the representative of the department.

(c) Appropriate action in case of any short fall with the packing list

(d) Supply of all goods, mentioned else where, to undertake and to carry out the commissioning of the entire electrical installations.

(e) Supply of all required tools and plants to undertake and to carry out the contract job.

(f) Providing all hand holding support and promptest attendance against the call of the department and or end user during the guarantee period.

4.5 Preparation and submission of all drawings, data, display of notices, drawings as required and as specified elsewhere in this document.

4.6. Any other work which has not been mentioned here but otherwise incidental and necessary for completeness of the contract work shall be carried out by the contractor within the scope of work under this specification.

5.0 Explanation of Terms

As regards the (Street Light) work, the words 'fitting', 'mounting', 'Earth Continuity Conductor; used in this specification shall mean as described below unless the context means otherwise.

5.1 Fitting: Lighting fixtures, Main switch, junction box, MCB loop box (Arm Bracket, Clamp) etc or any other item connected to the lighting system.

5.2 Mounting: Fixing of the fitting in proper alignment as required including supply of all necessary hardware, masonry work, welding, gas cutting or any other material and consumables that may be required for proper fixing of the fitting.

5.3 Earth Continuity Conductor (ECC): The conductor, including any clamp, connecting to the earthing lead or to each other those parts of an installation which are required to be earthed.

6.0 General Technical specifications

The electrical street Light installation comprising of Loop in loop out system of cable termination for outdoor lighting in balanced phase, gland and sockets etc including all cabling works, grounding works and other items as would be required for satisfactory completion of the job. The general technical specifications of almost all major items have been generally described here in after for convenience and compliance of the tenderer. They are advised to quote their offer accordingly.

6.1.1 Luminaries

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150-200W LED Streetlight luminaire IP-66 Protection comprises of die cast Aluminium housing and heat resistance toughened glass with Efficacy > 140 LPW, CCT (K) 5700 ANSI, CRI 70, Input Voltage 240V, Current 0.954A, RATED SYSTEM WATTAGE AND CURRENT WILL HAVE TOLERANCE AS PER IS 16104: 2012,

MATERIAL SPECIFICATIONS:

1. Housing: Aluminium Die cast housing powder coated in DA Grey IS 632
2. Glass: Heat resistant toughened glass.
3. Internal Wiring: PVC coated multistrand wire
4. Cable: 3C x 1.5sq.mm PVC coated multistrand cable.
5. Surge Arrestor: 4KV inside the Driver. 10KV outside the driver.
6. Over voltage cut off protection.
7. Driver: Silicon potted BIS marked driver. Can Survive input Voltage Stress of 325V for 8 hours
8. LED chip: OSRAM. The estimate Life span of LED should be > 66,000 hours/50,000 hours
9. LM – 80 test report along with TM – 21 report needs to be submitted.
10. The photo biological safety norms need to be submitted as per IEC 62471 / EN 62471 / IS 16108.

ELECTRICAL PARAMETERS:

1. Rated: Voltage (V) 220-240V
2. Frequency: (Hz) 50 ±3
3. Operating Voltage: Range (V) 120V – 270V
4. Current (A) @ 240V: 0.954
5. Wattage (W) @240V: 220
6. P.F.: >0.95(Full Load)
7. I THD: < 10%(Full Load)
8. Cable Entry: Through mounting pipe.
10. Protection: IP66

6.1.2 Minimum Criteria for OEM of Street Light Luminaries

- OEM should have its own manufacturing facility in India and in operation for at least 5 years in LED luminaire manufacturing.
- OEM should be ISO 9001:2015 & ISO 14001:2015 certified.
- OEM should have their authorized service centre at Kolkata.
- OEM must have their own In-House Design & Development, Testing and Manufacturing of LED Luminaires. For drivers, all the relevant certificates from/ of the driver OEM shall have to be submitted. Random testing will be made by Department or their authorized representative from any NABL accredited Lab and Factory. (For both pre dispatch and after delivery batches)

6.1.3 Performance Guarantee:

Optimums LED Street light 150-200 watt supplied against this specification shall be guaranteed for a period of 60 months from the date of completion of work, any engineering error, omission, wrong provisions, etc. which do not have any effect on the time period, shall be attended to as and when observed/pointed out without any price implication. This specification is also covered for any item of works which may not have been mentioned here but is usual or

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necessary to complete this instant electrical installation work shall be deemed to be included with this specification.

Factory Test can be performed in OEM house by the contractor upto the satisfaction of EIC.

6.2 Cables & Wires

6.2.1 1100 Volt grade power cable

6.2.1.1 1100 volt power cable shall be aluminium stranded conductor A2XFY PVC / XLPE insulated, PVC extruded inner sheath, single galvanized steel wire armoured having an overall extruded PVC sheathing and shall comply with latest revision of IS: 1554 (P-I).

6.2.1.2 Thermal properties of cable shall permit maximum conductor operating temperature of 70°C and short circuit temperature of 160°C. However, it shall be capable to withstand overload for short periods without any harmful effect on cable life. It shall also safely withstand short circuit current without any deformation of insulation or displacement of conductors.

6.2.1.3 The cables shall be tough and abrasion proof and shall have long service life.

6.2.1.4 The conductor shall be composed of either from high electrical purity aluminium wires or plain annealed high conductivity copper and conform to latest revision of IS:8130 -1976

6.2.1.5 The insulation shall be of high quality XLPE/ PVC base compound complying with requirements of Type-1 compound of latest revision of IS: 5831-1970. The insulation shall be applied by the process of extrusion.

6.2.1.6 The sheath shall be of PVC base compound complying with requirements of Type-6 compound of latest revision of IS: 5831-1970.

6.2.1.7 Armouring shall be applied over the inner sheath for all multicore cables. Outer sheath extruded over the armouring for multi core cables where as in case of un armoured single core cables, it shall be extruded over the insulation.

6.2.1.8 Outer sheath shall be embossed with manufacturer's name & brand, voltage grade and year of manufacture.

6.2.9 All the cables shall have ISI certification marks.

6.2.2. 1100 volt grade wires

All wires for wiring work shall be single core stranded Flame Retardant PVC insulated and unsheathed wire for working voltages up to and including 1100 Volt with copper conductor and shall conform to latest revision of IS: 694 (P-I).

6.2.3 Cables & Wire termination

For 1.1 KV grade LT power cables and wires (PVC / XLPE) having aluminium conductor, either soldering or crimping type joints are to be used. Extreme care and cleanliness shall be maintained to achieve satisfactory results in joints. All other necessary components and hardware (compression glands, lugs and jointing materials) for making a cable joints complete in all respect shall be within the contractor's scope.

CCTV Camera

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1080P High Definition H.264 IP WeatherProof IR Bullet Camera, 1080P high resolution, H.264, and MJPEG simultaneously (Dual-encoders), H.264 high profile – saves bandwidth and storage, True Day/Night (with IR-cut filter), WDR, 3DNR, DC IRIS, and Anti-flicker, IR beam up to 50m, Comprehensive I/O ports: audio in, audio out, video out, Alarm In, Alarm Out, RJ45, SD card slot, RS485, Built in Power over Ethernet (PoE); 100Base-T Ethernet, Event triggering – camera tampering, Motion detection, Network loss, Alarm Input, Video loss, Event trigger action – SNAP, Record video in SD card, send to FTP, send to Email, External output activation, voice alert, notify to CMS, Edge storage – up to 32G with Honeywell Universal Surveillance (HUS) Platform and NVRs, IP66, ONVIF profile incl. 24 core optical fiber cable with protection pipe, box, single mode dual core media converter, 43" 4K UHD (3,840 x 2,160) with stand, Refresh Rate: 60 hertz, X Reality Pro HDR | Live Colour Display Motionflow XR100 Connectivity: 3 HDMI ports to connect set top box , required capacity Hard Drive, 9U Rack at server room in adequate quantity and with all necessary accessories as per technical specifications and direction of EIC. (Make: camera-Honeywell/Hikvision. Fiber- Dlink, Media converter-Tplink, TV- Sony/LG/Samsung)

7.0 Earthing

7.1 The installation shall generally be carried out in accordance with the Indian Electricity Rules 1956, as amended from time to time and in conformity with the requirement included in the Indian Standard Code of Practice for Earthing IS: 3043 -1987.

7.2 All terminal connections for earthing shall be carried out by soldering earth strips / wires with suitable lugs.

7.3 Pipe electrodes for earthing shall be made of galvanized steel of class 'B' Medium quality and shall not be smaller than either 50 mm 3.64 mm thick. The length of the pipe electrode shall not be less than 3.04 Mtr (10'). A hole shall be provided at 100 mm (4") from the top end to receive a 13 mm (½") dia galvanized bolts, nuts etc and the bottom end shall be chiseled out for penetration in the soil. Proper sizes of galvanized flat shall be connected securely on the properly cleaned surface of top end of pipe electrode by means of a 100 (4") long x 13 mm (½") dia GI bolts, nuts and double washers. The earth lid flat / conductor shall be protected mechanically by means of a continuous length GI protection pipe of suitable dia up to a height of 0.6 Mtr (2') above ground level and the same shall be completely filled with bitumen compound and topped up to over flowing. All galvanization shall be hot deep quality and the galvanization thickness shall be as per latest IS specification.

7.4 The distance between the pipe electrodes where multiple earthing is employed shall be at least not less than the length of electrodes and no two pipe electrodes shall be connected together in parallel.

7.5 The value of resistance to earth shall not exceed one (1) ohm.

Driver Technical Details:

1. The bidder / OEM has to provide the test report for LED junction temperature should not ≥ 85 °C at the ambient temperature of 25 °C and with internal surge protection of minimum 5KV.

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2. The driver should be epoxy encapsulated within the light fixture that has separate optical & driver compartment, driver single Integrated constant current potted electronic driver. The fixture, with the encapsulated driver inside, must be IP-66 compliant.
3. Serviceability of LED Luminaries: The driver can be replaced at site if required.
4. The efficiency shall be more than 85 % in all cases at all times during project period.
5. Maintenance friendly and a separate compartment in main housing for external SPD or external fixing arrangement (bolted only) for external SPD below the light on the non-light emitting surface of the housing.
6. Protection from Voltage surges (SPD) Firm may provide appropriate surge protection arrangement, at each Flood Light, to protect the Flood Light from switching surges, which are expected / prevalent in Flood Light supply networks in India. Additionally, as per ANSI C 136.2-2014/ UL-1449/ IEC 61643-11, External Surge protection (SPD) with Thermal Protection (TMOVs) of minimum 10KV/5KV with capability to withstand a minimum of 15 pulses of 10KV/5KV to be separately installed (fixed with screws) with each fixture below the Light with IP 66 protection for incoming and outgoing wires on SPD and Light. Alternatively, the external SPD may be provided inside the driver compartment or special enclosed compartment adjoining the driver compartment or adjoining it with proper fixing (bolting / DIN rail arrangement) for SPD inside. The SPD shall follow IEC 62305 & IEC 61643-11-2011.
7. Housing - Electrical Compartment of Driver box contains cable glands for cable entries, and push in terminals for mains and control input. Electrical connection box of floodlight contains cable glands and push-in terminals enabling electrical connection to driver box. The end-caps can be easily opened to access the bolts to aim the floodlight; the slot-hole in the bracket facilitates flexible installation.
8. BIS certificate / Safety test for Drivers as per IS: 15885 is must be submitted for driver.
9. The driver should be EMI/EMC Compliance as per IEC:61547.
10. The driver safety requirement needs to be qualify as per IEC:61347-2-13/EN:61347-2-13 / IS:15885-2-1.

Octagonal Poles.

Octagonal Poles shall be polygonal, continuously tapering, hot dip galvanized with suitable fixed type head frame for mounting the flag.

Octagonal Poles offered shall have following special features

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1. Octagonal Poles shall be structurally designed in accordance with PLG 7– latest edition considering the gust wind speed as per IS 875 prevailing in the region.
2. The steel used in the construction of the Octagonal Poles shall comply with IS 2062 grade E350 / BS EN 10025 or Equivalent having minimum yield strength of 350 N/Sq. mm.
3. The Octagonal Poles shall be of continuously tapered, polygonal cross section, presenting a good and pleasing appearance and shall be based on proven In-Tension design conforming to the standards referred to above to give an assured performance and reliable service.
4. The Octagonal Poles shaft shall be manufactured from high tensile steel plates confirming to IS 2062/ BS EN 10025 having minimum yield strength of 350N/Sq.mm and silicon content less than 0.06%.
5. For the environmental protection of the Octagonal Poles, the entire fabricated Octagonal Poles shall be hot dip galvanized internally and externally having a uniform average coating of 75 microns for plates more than 6 mm and 70 microns for plates 6 mm and less thickness. The Zinc shall have minimum 99.995% purity confirming to IS 209. Reports needs to be submitted.
6. The length of any individual segment shall be such that it can be easily transported and erected. All similar parts shall be made strictly inter-changeable. Octagonal Poles segments, as far as possible, shall be fabricated in single piece. In case of restriction due to the size of hot dip galvanizing bath, pole segments having outer diameter more than 1mtr may be fabricated in two halves and seamlessly welded after galvanizing. After seamless welding of both halves, surface of the welded portion shall be cleansed and prepared. Two welded portions shall be galvanized by suitably dipping in hot zinc bath or by metallizing using molten zinc technique. For metallizing, the process as per ANSI/AWS WCZ/D19.0-72 or other National/International standard/Guidelines shall be followed. The thickness of zinc coating by metallizing shall not be less than the minimum specified for hot dip galvanizing.
7. The Octagonal Poles sections shall be joined at site by slip-stress-fit method and minimum overlap distance shall be 1.5 times the diameter at penetration.
8. The Octagonal Poles structure shall be suitable to sustain an assumed maximum reaction arising from a wind speed as per IS 875 Part-3 2015 (three second gust) and shall be measured at a height of 10 meters above ground level.
9. The design life of the Octagonal Poles shall be 25 years. The force co-efficient taken for design of the twenty-sided polygonal structure is to be established from the wind tunnel test data.
10. All welding shall be undertaken and performed as per WPS/PQR in strict accordance with BS 5135.or AWSD1.1.

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11. The Octagonal Poles manufacturer should have in-house civil, structural and product design facilities and the shaft is to be manufactured from ISO 9001, ISO 14001 and ISO 45001 certified factory taking care of all aspects of design, quality, environment and safety.

12. The Luminaries supplier shall have their own in-house testing facilities for testing of photometry, other electrical and mechanical parameters of luminaries with facilities to prepare illumination design for said application.

All MS parts including hardware shall be hot dip galvanized as per BSEN-ISO1461 or equivalent. Factory Test can be perform in OEM house by the contractor upto the satisfaction of EIC.

FEEDER PILLAR

Work of feeder Pillar shall be carried out as per AUTHORITY for Electrical works Part –I (internal) -2013 and & Part –II (External) 1994 amended up to date. Supplying , erection , testing and commissioning of floor mounted single door outdoor type feeder pillar of suitable size (as per design requirement) fabricated out of minimum 1.6mm/ 2.00 mm thick nominal CRCA MS sheet (2 mm outer and 1.6 mm inner) with suitably thick angle iron frame of suitable dimensions and suitable to accommodate and S/F of all required accessories there in i/c connection , interconnection with suitable size copper wire , numbering , power coated after applying pretreated by seven tank process and making brick foundation complete as required Standard :

The equipment shall confirm to this specification and latest revision of following codes with all amendments: -

Sl. No.	Title	Indian Standard
2.1	IS 5039	Specification for distribution pillars below 1000V AC
2.2	IS 13947 part 2	Low Voltage switchgear
2.3	IS 8623	Specification for low voltage switchgear
2.4	IS 12063	Classification of degrees of protection provided by enclosures of electrical equipment.
2.5	IS 13703	Low voltage HRC fuses
2.6	IS 5	Color of ready mixed paints
2.7	IS 191	Specification for copper
2.8	IS 5082	Wrought Aluminum & Al alloy plates & sheets for electrical applications

3.1	Supply Voltage	3 phase neutral, AC 415Volt +/-10%
3.2	Supply Frequency	50 Hz +/- 5%
3.3	Location of panel	Outdoor, on complete refurbished area Nehru place
3.4	Pollution	Heavily Polluted and Dry
3.5	Humidity	90% maximum

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3.6	Ambient Temperature	Average 40 Deg C, Maximum 50 Deg C
3.7	Incoming supply to feeder pillar panel	From distribution transformer or Main feeder pillar panel
3.8	Seismic Zone	4

1. Complete design/drawings of feeder Pillar , Nos , their locations etc to be got approved from Engineer in Charge prior to execution of work .
2. Suitable M.S. top cover with suitable slop, overhang shall be provided for protection against rain/weather etc.
3. Detachable cable gland plates 3 mm thick shall be provided at the bottom having suitable knock out for compression glands. Adequate space shall be provided below the same for safe bending & termination of cables.
4. The enclosure shall be provided with ventilation louvers covered with the wire mesh, lifting hooks, supporting legs, double earth terminals with double nuts & washers.
5. The internal arrangement shall be compartmentalized for incoming, outgoing switch gears/bus bars & design shall be such as to permit suitable arrangement for incoming & outgoing cables. Provision shall be made for lighting inside the feeder pillar.
6. All incoming and outgoing switch gears shall be properly marked, indicating the connected load, cable sizes, and outgoing connections etc as required.
7. Interconnection of the various mountings on the feeder pillar shall be done using PVC insulated conductor or solid strips with PVC taping / sleeving of appropriate sizes. Termination shall be made such that local heating is avoided. Feeder pillar shall be pre-treated with 7 tank process followed by powder coating.
8. All the metal work of feeder pillar shall be painted prior to erection with one coat of anti-rust primer. After fabrication, they shall be painted with two coats of appropriate enamel paint as required, on all sides wherever accessible
9. All connections and inter connection wires inside the feeder pillar shall be provided with tags / ferrules for identifications.

8.0 Erection

8.1 Prior to erection of any equipment, the contractor, upon opening of the packing cases in presence of the departmental representative not below the rank of Junior Engineer shall ensure the quantity of the respective packing list items and their conditions for proper erection. If any defect / damage in any item are observed, the same shall be brought into the notice of manufacturers for remedial measure.

8.2 All installations shall be made at site in a most Engineer like manner as per the direction of the Engineer-in-Charge observing all recommendations and guide lines of the individual equipment manufacturers.

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8.3. All the appropriate tools and tackles as would be required for the proper installation works of any equipment and or requisitioned by the department for such purpose shall be arranged at site by the contractor before the work is started.

8.4. All sorts of consumables like cleaning solvent, emery cloth of various grades, grease, cotton waste, cloth, cement, stone chips, sand, bricks, non shrinking powder etc shall be provided by the contractor. The cost for such erection work covering all expenditure is included in the priced BOQ.

8.5. All false works, staging, scaffolding etc and as would be required for good workmanship shall be arranged by the contractor and same shall be removed by the contractor after completion of the erection works, mending all damages good in the civil structure.

8.6. All electrical installations shall comply with the requirements of Indian Electricity Acts and rules made there under and with any other regulations that may be applicable. The electrical installations shall only be carried out by authorized persons competent to undertake such work under the rules and regulations.

8.7 All connections for the internal wiring shall be terminated by crimping type lugs or soldered lugs.

9.0. Painting

The painting works, unless otherwise stated elsewhere, shall be applicable for the following items as follows and as directed by the department and as mentioned in BOQ.

10.0 Tests

Before the installation is put into service, following acceptance tests shall be carried out by the contractors in presence and to the entire satisfaction of EIC or his representative. The instruments used for testing shall be up to date calibrated.

10.1 Lumen output Test of Luminaries

It shall be ensured by physical tests at site that all luminaries have the specified lumen output.

10.2 Insulation Resistance Tests of Cable:

By applying a 1000 volt Megger between earth and any lead of cable and between two leads of cable. The result should be not less than 50 meg ohm.

10.3 Earth continuity Test

The earth continuity conductor including metal conduits and metal sheaths of cables in all cases shall be tested for electrical continuity.

10.4 Earth resistance Tests

In order to ensure the effectiveness of the earth installation, the value of earth resistance shall be within 1 ohm.

10.5 Submission of Test Form

The contractor shall have to submit the test form duly filled in the test results for obtaining the power from the supply company.

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**ADDITIONAL TECHNICAL SPECIFICATIONS FOR CLAUSE 305, EMBANKMENT
CONSTRUCTED WITH FLY ASH ADDITIONAL TECHNICAL SPECIFICATIONS FOR CLAUSE
305, EMBANKMENT CONSTRUCTION WITH FLY ASH**

1.0 Scope

This Additional Technical Specifications embankments using fly ash. Clause 305 (Appendix-I) provide for construction of embankment using fly ash. Clause 305 Of General Technical Specifications (issued by MORTH and published by IRC) and Supplementary Technical Specifications for earthen embankments are applicable for construction of embankments with fly ash also to the extent relevant. In case of any deviations, this Additional Specifications (Appendix -I) shall take precedence.

1.0 Materials and General Requirements

2.1 Fly Ash

The term fly ash' in this document as well as in other bid documents shall denote any type of coal ash from thermal power stations either in dry form (fly ash or bot tom ash) or in wet condition from ash pond (pond ash), unless specifically mentioned otherwise. The materials to be used in embankment construction should be characterized to determine their physical, chemical and engineering properties. Suitability of the material and design parameters shall be obtained through characterization tests.

The following information on the fly ash should be made available for Engineer's approval 7(seven)days before commencement of compaction work.

- (i) Particle size analysis of the material as per IS: 2720 (Part 4)
- (ii) The Maximum Dry Density (MDD) and Optimum Moisture Content (OMC) as per IS: 2720 (Part 8).
- (iii) A graph of density plotted against moisture content from which each of the values in (ii) above of maximum dry density and optimum moisture content were determined.

Once the Engineer has approved the above information, it shall form the basis for compaction.

The other engineering properties of fly ash to be determined in accordance with the procedure laid down in IS: 2720 (Method of tests for soils relevant parts) are given below :

- (i) Shear strength parameters.
- (ii) Compressibility characteristics
- (iii) Permeability and capillarity

Typical values for different geotechnical properties of fly ash are given in Table 1 for guidance. In general fly ash with properties as given in Table 1 are acceptable for embankment construction.

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Table 1 : Typical Geotechnical Properties of Fly Ash

Parameters	Properties /Range
Specific Gravity	1.90-2.55
Plasticity	35%
Maximum dry density (gm/cc)	Non plastic
Optimum moisture content (%)	12%
Cohesion (kN/m)	0.9-1.6
Angle of internal friction (°)	18.0-38.0
Compression Index Cc	1.715 x 10 ⁻⁵ -2.0 x 10 ⁻³
Permeability (cm/sec)	8 x 10 ⁻⁶ - 7x 10 ⁻⁴
Particle size distribution (% of materials):	1-10
Clay size fraction	8-85
Silt size fraction	7-90
Sand size fraction	0-10
Coefficient of uniformity	3.1-10.7

The soluble sulphate content shall be according to Clause 305.2.1.3 of MORTH specifications.

Soil cover

The fly ash embankment should be covered on the sides and top by soil to prevent erosion of fly ash. The cover soil shall comprise soil as per Clause 305 and as approved by Engineer, and the compaction level of the same shall conform to Clause 305. Additionally, the side cover soil shall satisfy the minimum requirements of the following properties:

Cohesion (kg/sq. cm)	0.3
Liquid limit	1.90-2.55
Plasticity Index	35%

Construction Operations

3.1 The primary operations such as setting out, clearing and grubbing, stripping and storing of top soil, dewatering, compacting ground supporting embankment shall be as per clause 201 and 305.

3.2 embankments of different heights shall be constructed with the following specifications.

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Embankment height upto 3 m

- (i) In case the embankment height is equal to or less than 3 m the same shall consist of a core of compacted fly ash provided with a compacted side covers soil.
- (ii) The first layer of fly ash shall be spread and brought to appropriate moisture content. The side cover soil and fly ash shall be laid simultaneously to ensure confinement to fly ash
- (iii) Fly ash and side exceeding cover soil shall be spread in layers of uniform thickness not 200 mm compacted thickness over the entire width of the embankment by mechanical means as specified in Clause 305.3.5.1. Moisture control of both fly ash and side cover soil shall be done as per Clause 305.3.5.2.
- (iv) For better compaction of fly ash it is preferred to use a vibratory roller with frequency range (1800-2200 rpm). The lift thickness shall be restricted to compacted thickness of 200 mm, Moisture content of fly ash at compaction shall vary from OMC to OMC+2%. The maximum dry density after compaction of the fly ash shall be 95% as per IS: 2720 (Part 8). The maximum dry density of the compacted fly ash when used at or near bridge abutments (for an embankment length equal to 1.5 times the maximum height of the embankment) shall, however, be 100%.
- (v) The contractor shall demonstrate the efficacy of the compaction equipment he intends to use by carrying out compaction trials on test sections. The procedure to be adopted for the site trials shall be first submitted to the Engineer for approval.
- (vi) Width of the side cover soil shall be 2000 mm measured horizontally.
- (vii) Same procedure shall be adopted for construction of subsequent fly ash layers side cover soil till the height reaches 500 mm below GSB layer. The 500 mm layer underlying GSB layer shall comprise suitable material to form the sub grade for the road pavement. The sub grade layer shall be less permeable than the fly ash layer.
- (viii) The cross section of embankment consisting of a core of compacted fly ash shall conform to MORTH Specifications

In case the embankment height exceeds 3 m

- (i) The embankment shall be basically a fly ash embankment with compacted thickness of intermediate cover soil layers 400 mm thick each, lying within

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the fly ash embankment at some intervals of height, over its entire width. The thickness of fly ash between the soil layers shall range between 1.0 m and 2.0 m and the same shall be constructed in accordance with the same procedure as described for construction of fly ash core in Para 3.2. (i) above. The soils contained in intermediate soil layers and the compaction thereof shall conform to Clause 305.

- (ii) Same procedure shall be adopted for subsequent construction of alternate layers of fly ash with side cover soil and cover soil layers laid thereon.
- (iii) The thickness of the top layer of the embankment may, however, fall short of specified thickness of either fly ash or cover soil layer (depending on the height of the embankment). In such case, the same shall comprise either fly ash (minimum thickness of 1.0 m) or cover soil layer as decided by the Engineer to be appropriate for this top layer, and compacted as per relevant specifications so as to reach 500mm below GSB layer. The 500 mm layer below GSB layer shall comprise suitable materials to form the sub grade for the road pavement. The sub grade layer shall be less permeable than fly ash layers.

3.3 The thicknesses and the types of materials to be laid depth wise may remain same over entire width generally for at least 1 km length of embankment, or as decided by the Engineer in Charge.

3.4 At locations where compaction of the fly ash/earth is impracticable using rollers, such as portions adjacent to masonry structures/steep abutments or around concrete drain pipes embedded in embankment, hand held vibratory tampers shall be used for compaction. The compacted layer thickness should not exceed 100 mm in such Technical Specifications

3.5 The Engineer may permit measurement of field density according to agreed procedure. Subsequent layers shall be placed only after the finished layers satisfies its density requirement. The soft areas where specified degree of compaction is not achieved, the material in the soft areas shall be removed and replaced by approved material.

3.6 After completion of the embankment construction, side soil cover shall be protected by turfing with sods as per Clause 307.

3.7 Whenever embankment construction is to be taken up against the face of natural slope or slopping earthworks face including embankments, cuttings, and excavations which are steeper than 1:4 (vertical : Horizontal), such faces shall be benched as per Clause 305.4.1 immediately before placing the subsequent fill.

3.8 Measurement for Payment and Rates.

No separate payment shall be made for any works included in this clause and rates

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are included within the Contract Price.

4.0 Handling and Transporting of Fly Ash

Fly ash shall be delivered in wet condition to the site in covered dump truck to prevent environmental pollution. Stock piling of fly ash should be avoided to the extent possible. In case stock piling at site is inevitable, adequate precautions should be taken to prevent dusting by spraying water on stockpiles at regular intervals. Otherwise, the surface of the fly ash stockpile may be covered with tarpaulins. Traffic movements may be restricted to those areas which are kept moist to prevent types of passing vehicles dispersing ash into the air.

5.0 Quality Control

Quality of compacted material shall be controlled through periodic checks on the compaction process or the end product, singly or in combination as directed. The end product must conform to the specifications.

6.0 Control Tests on Borrow Materials

The control tests on borrow areas during construction shall be as per clause 903. The rate of testing must be stepped up as found necessary, depending on the compaction methods employed at the project. The samples collected for testing moisture content should be representative of the material being placed. Because fly ash may air dry relatively rapidly, samples should not be taken from the surface of the lift, but should represent the overall moisture content.

6.1 Compaction Control :The test for compaction control shall be as per Clause 903.2.2 of specification.

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SPECIAL SPECIFICATIONS FOR STEEL STRUCTURE

Special Specification :

I.S Code details for super structure of structural steel work :
for rivet, bolt, and welded constructions using hot rolled steel sections

ii) IRC:22-latest revision (Section VI) referred to wherever applicable in case of concrete work composite with steel.

iii) IRS Code of practice for design of steel or wrought iron bridges carrying rail, road pedestrian traffic incorporating latest addendum/corrigendum

iv) BS 5400-part 3 3:1982 code of practice for Design of steel Bridges.

3. Design Consideration:

i) **Buckling load** : The load at which a member or a structure as whole collapses in service or buckles in a load test.

ii) Dead loads: The self-weights of all permanent construction and installations.

iii) Elective lateral restraint : Restraint which produces sufficient resistance in a plane perpendicular to the plane of bending to restrain the compression flange of a loaded strut, beam or girder from buckling to either side at the point of application of the restraint.

iv) Elastic critical moment: The elastic moment which will initiate yielding or cause buckling.

v) Factor of Safety : The factor by which the yield stress of the material of a member is divided to arrive at the permissible stress in the materials.

vi) Gauge: the transverse spacing between parallel adjacent lines of fasteners.

vii) Imposed live load: The load assumed to be produced by the intended use of occupancy including distributed, concentrated, impact, vibration, snow loads wind and earthquake loads.

viii) Load factor : The numerical factor by which the working loads is to be multiplied to obtain an appropriate design ultimate load.

ix) Main member: A structural member which is primarily responsible for carrying and distributing the applied load.

x) Pitch: The center- to- center distance between individual fasteners in a line of fasteners. that which is provided for stability and or restrain.

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xi) Secondary member: Secondary member is that which is provided for stability and or restraining the main member for buckling or similar modes of failure.

xii) Welding terms : Unless otherwise defined in this standard the welding terms used shall have the meaning given in IS:812-latest revision of codes.

xiii) Yield stress: The minimum yield stress of the material in tension as specified in relevant Indian Standard.

xiv) Warping stress : Stress in a box girder due to transverse bending of walls of the box and torsional and distortional warping.

3.B: Steel :

Properties of steel :

i) Young's Modulus= 2.11×10^5 MP
(Modulus of Elasticity)

ii) Shear Modulus= 77×10^3 MPa

iii) Poisson' Ratio = 0.30

iv) Coefficient of Thermal Expansion = $0.000117/\text{od unit length}$

Structural steel;- all structural steel shall, before fabrication comply with the requirement the Indian Standers or **their last revision**.

Codes

IS: 800

IS Hand Book

IS. 808-1989, IS:1161-1979, IS:1239 (P t.-I)-1999, IS:1239 P 2-1992

IS:1734-1989, IS:1732-1989, IS:1852-1973, IS:2062-1992, IS:4923-1985

IS:8500-1992, IS:11587-1986

Steel for machined parts :

IS:1875-1992 ,IS:1875-1992

Castings and Forgings:

IS:1030-1889, IS:1875-1992, IS:2004-1991, IS:2644-1986, IS:4367-1991

Fasteners :

IS:1148-1982, IS:1149-1982, IS:1363-1992, IS:1364-1992(Pt. I to P. 3)

IS:1367-1979-94 (Pt. 1 to Pt. 18), IS:1929-1982, IS:2155-1982.

IS:3640-198, IS:3757-1985, IS:4000-1992, IS:5369-1975, IS:5370-1969

IS:5372-1975,IS:5374-1975,IS:S624-1970,IS:6610-1972,IS:6623-1985

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IS:6649-1985,IS:7002-1991.

Welding Consumables :

IS:814-1991,IS:1395-1982,IS:3613-1974,IS:6419-1971,IS:6560-1972
IS:7280-1974

Welding :

IS:812-1957,IS:816-1969,IS:822-1970,IS:1024-1979,IS:1182-1983
IS:4853-1982,IS:5334-1981,IS:7307(Pt.1)-1974, IS:7310Pt.1)-1974.
IS:7318(Pt.I)-1974, IS:9595-1980.

4. Load and stress

Refer to IRC: 6-2014

4.1 Other Effects:

This effect shall be included where applicable, the effects due to creep and shrinkage of concrete for composite deck and warping for box girder sections.

4.2 Erection effects

This shall include the loads and forces arising out of construction equipment and the effects of wind / seismic.

4.3 Permissible Increase in stress:

The permissible increase (per cent) in stress in the various members covered by IRC code ; IRC:24-2001.

4.4 Limitation:

Permissible increase in stress, shall, however, be limited to 90 per cent of yield stress.

4.5 Worst Effect :

Subject to the provision of other clauses, all forces shall be considered as applied And all loaded lengths chosen in such a manner that the worst adverse effect is caused on the member under consideration

4.6 Working Stresses :

Permissible Stresses for steel work are covered by IRC code : IRC : 24-2001. The permissible Stresses in axial or flexural compression shall not exceed as per relevant clauses considering the effect of bulking

4.7 Equivalent Stress :

. Equivalent stress covered by IRC code: IRC:24-2001. Irrespective of the permissible increase of Stress in other clauses, the equivalent stress calculated shall not exceed 92 per cent of yield stress

4.8 Permissible Stress in bolt, Rivets and Tension Rods:-

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All fasteners would be in accordance with the Indian standard and covered by IRC code, IRC: 24-2001. Yield stress would be in accordance with Indian Standards.

4.9 Calculation of stress

Calculated stress for bolts, rivets, and tension rod are covered by IRC code, IRC: 24-2001. Yield stress would be in accordance with Indian Standards.

4.10 Gross and net area:-

The gross and net area of the rivets and bolts was calculated as per clauses of IS 800-2007 and also the basic permissible stress of rivets and bolts, tension rods are covered by IRC Code : IRC24-2010.

4.11 HSRG Bolts :

High strength friction grip (HSFG) bolts shall be used in conformity with IS: 4000-1992.

4.12 Permissible Stress in welds:

The basic permissible stress of welds are covered by IS Code : IS 816 and as modified in IS 1024 of latest revision.

4.14 Butt weld:

Butt weld shall be treated as parent metal with a thickness equal to the throat thickness and the stress shall not exceed those permanent of the parent metal.

4.15 Fillet Welds:- The basic permissible stress in the fillet weld shall not exceed the permissible shear stress as follow:-

Steel Conforming As per IS: 815-1974	Electrode Designation	Shear Stress MPa
IS: 2062- 1974	EXXXX-43X	108
Is: 8500-1991	EXXXX-51X	131
Grade Fe 510 W-HT		

4.16 Plug Weld:- The permissible shear stress in plug weld shall not exceed those given for fillet welds as above.

4.17 Site welds: the permissible stress in the site welds shall be reduced 80 percent of those given in case of shop weld. The permissible stress of site welds are covered by IS Code : IS 2062, IS 11587, IS 1977, IS 8500, IS 961 of latest revision.

4.18 Combined Stress in a weld:

Are covered by IRC code: **IRC:24-2010.**

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4.19 Stress Analysis

Are covered by IRC code: IRC:24-2010 for sectional properties, longitudinal stress in beams, shear stress, Primary stress, Secondary stress, deformation, stress.

For open web girder of effective span greater than 50m properly cambered for such girder deformation, stress calculated under IRC24-2010 may be ignored.

5.0 General Design

5.1 Effective spans

Are covered by IRC code: **IRC:24-2010** and **IS800-2007**.

5.2 Effective Depths

Are covered by IRC code: **IRC:24-2010** and **800-2007**

5.3 Spacing of Girders

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

5.4 Depth of Girders

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

5.5 Deflection of Girders

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

5.6 Camber

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

5.7 Minimum Section

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

5.8 Sectional Area:-

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

5.9 Effective sectional area

Are covered by IRC code: **IRC:24-2010, IS 800-2007, IS2062, IS8500** of latest revision.

5.10 Tension Members (angles and tees)

Are covered by IS codes: **IS 800-2007**

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5.11 Compression Members

Are covered by IS codes: **IS 800-2007**

5.12 Skew Bridge

For skew bridge, detailed analysis of forces shall be required, however the angle of skew is within 15 degree, such detailed analysis may not be required.

6.0 Design of beams

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.1 Web plates

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.2 flanges

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.2.6 Effective Length of compression Flanges

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.2.7 Beams with laterally supported compression:

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.2.8 Cantilever beams without intermediate lateral support

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.2.9 Beams continuously restrained by deck at compression flange level:

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.2.10 Slenderness Ratio

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.2.11 Permissible Bending Stress ;

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.2.12 Permissible shear Stress :

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.2.13 Curtailment of Flange Plate

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.2.14 Connection of Flange to web

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

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6.2.15: Dispersion of load through Flange to web

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

6.2.16 Web Stuffers

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.0 Details and Design

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.1 Intermediate stiffeners

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.2 Transverses stiffens

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.3 Longitudinal stiffeners :

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.4 External forces on Intermediate stiffeners :

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.5 Connection of intermediate stiffeners:

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.6 Outstand of all stiffeners :

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.7 Flange Splices :

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.8 Splices in Web :

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.9 End Connections:

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.10 Lateral Bracing :

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

7.11 Expansion and Construction :

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

8.0 DESIGN OF COMPRESSION MEMBERS

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

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8.1 Base plate :

Are covered by IRC code: **IRC:24-2010** and **IS 800-2007**

9.0 DESIGN OF TENSION MEMBERS:

Design of Tension members should generally follow the considerations under clause of **IRC: 24-2010** under Trusses or open Web Girders.

10.0 DESIGN OF TRUSSES OR OPEN WEB GIRDERS :

Trusses or open web girders are defined as triangulated skeletal girders. For analysis of trusses, the following assumption may be made unless rigorous rigid frame analysis is adopted.

- a) All members are frictionless pin jointed.
- b) All members are straight and free to rotate at the joints.
- c) All loads including self weight of members are applied at the joints

10.1 Intersection at Joint .

Are covered in **IRC: 24-2010**

10.2 Compression Member :

The design of straight members of uniform cross-section subjected to axial compression or to combined compression and bending.

Are covered in **IRC: 24-2010**

10.2.1 Effective section :

Are covered in **IRC: 24-2010**

The unsupported projection of any plate, measured from its edge to the line of rivets, bolts or welds connecting the plate to other parts of the section shall not exceed:

- i) 16t for Mild Steel
- ii) 14t for HT Steel

10.2.2 Permissible stress and slenderness ratio:

Are covered in **IRC: 24-2010**

10.2.3 Lacing and battening :

Are covered in **IRC: 24-2010**

10.2.4 Effective length of compression members other than lacing:

Are covered in **IRC: 24-2010**

10.2.5 Effective length of unbraced compression Chords :

Are covered in **IRC: 24-2010**

10.2.6 Design of lacing of compression members :

Are covered in **IRC: 24-2010**

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10.3 Tension members :

Are covered in **IRC: 24-2010**

10.3.1 Tension members composed of two components back-to-back

Are covered in **IRC: 24-2010**

10.3.2 Design of lacing of Tension Member

Are covered in **IRC: 24-2010**

10.3.3 Battening of tension members :

Are covered in **IRC: 24-2010**

10.4 Splices :

10.4.1 For compression member :

Are covered in **IRC: 24-2010**

10.4.2 For Tension members:

Are covered in **IRC: 24-2010**

10.4.3 Connections at Intersection:

Are covered in **IRC: 24-2010**

10.4.4.Lug Angles:

Are covered in **IRC: 24-2010**

10.4.5 Section at pin Holes in Tension Members :

Are covered in **IRC: 24-2010**

10.4.6 Pin Plate :

Are covered in **IRC: 24-2010**

10.4.7 Diaphragms in Members :

In addition to diaphragms required for the proper functioning of the structure, diaphragms shall be provided as necessary for fabrication, transport and erection.

10.4.8 Lateral Bracings :

Are covered in **IRC: 24-2010**

10.4.9 Sway bracings :

Are covered in **IRC: 24-2010**

10.4.10 Portal bracing :

Are covered in **IRC: 24-2010**

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11.0 CONNECTIONS :

11.1 Composite Connections :

In any connection which takes a force directly communicated to it and which is made with more than one type of fastening, only rivets and turned and fitted bolts may be considered as acting together to share the load. In all other connections sufficient number of one type of fastening shall be provide to communicate the entire load for which the connection is designed.

11.2 Welded connections

Are covered in **IRC: 24-2010 and IS: 800-2007**

11.2.2.1 Strength of weld

11.2.2.2 Butt weld:

The strength of a full penetration butt weld shall be taken as equal to the strength of the weaker of the parts joined provided the yield stress of the weld metal is at least equal to that of the parent metal.

The strength of partial penetration butt weld together with its reinforcing fillet welded, 1 any, shall be calculated as for a full penetration fillet weld The throat thickness shall be taken as

- a) The depth of weld preparation where this is of the J or U type.
- b) The depth of weld preparation minus 3mm where the preparation is the V or bevel type.

11.2.2.3 Fillet weld:

11.2.2.4

The strength of fillet welds shall be based on the effective throat thickness and the effective length.

The effective length throat thickness shall be considered as the height of a triangle that can be inscribed within the weld and measured perpendicular to its outer side.

The effective length shall be considered as the actual length minus twice the leg length. In case of fillet welds with end returns as per clause 11.2.2.3.1 the effective length shall be considered as the actual length.

11.2.2.5 General requirements of welds

11.2.2.5.1 Fillet weld:

Maximum leg length of a fillet weld shall be the thickness of the connected parts at the edge.

Minimum leg length of a fillet weld shall be in accordance with IS: 9595- of latest revision

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Intermittent fillet welds:

Intermittent fillet welds shall be used in tension region of any member, considering their weakness in fatigue. When used in other regions, the undernoted shall be apply.

The clear unconnected gap between the ends of the welds whether in line or staged shall not be more than 200 mm and also shall not be more than :

- a) 12 times the thickness of the thinner part when the part is in compression.
- b) 16 times the thickness of the thinner part when the part is in tension
- c) One-quarter of the distance between stiffeners when used to connect stiffeners to a place or other part subject to compression or shear ,

In a line of intermittent welds, there shall be a weld at each end of the part connected.

End returns

The fillet weld shall be returned continuously around the corner at the end of the side of a part or a length beyond the corner of not less than twice the leg length of the weld.

In built-up members in which plates are connected by intermittent welds, continuous side fillet welds shall be provided at the ends of each side of the plate for a length at least equal to three quarter of the width of the narrower plate concerned. In exception cases, where this is not possible, the intermittent plug or slot weld shall be provided to prevent separation

End connections by sides fillets:

Covered in IRC code no. **IRC:24-2010**

End connection by transverse welds :
Covered in IRC code no. **IRC:24-2010**.

Welds with packings :
Covered in IRC code no. **IRC:24-2010**.

Welds in holes and slots :
Covered in IRC code no. **IRC:24-2010**.

11.2.5.2 T Butt joints:

Butt welds in T joints shall be completed by means of fillet welds each having a size of not less than 25 per cent of the thickness of the outstanding part.

11.2.5.3 Plug welds :

The entire area of the hole or slot shall be filled with weld metal having a thickness:

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- a) Equal to the thickness of the holed or slotted part where it is 16 mm or less.
- b) In other cases, not less than any of the following :
 - i) 16 MM
 - ii) 0.45 times the diameter of the hole or the width of the slot.
 - iv) One-tenth of the length of slot but not greater than the thickness of the holed or slotted part.

Area covered in **IRC24-2010 and IS 800-2007**

11.2.3 Connection (other than weld)

Area covered in **IRC24-2010 and IS 800-2007**

11.2.3.2 Connections and splices in flexureal members

Area covered in **IRC24-2010 and IS 800-2007**

11.2.3.3 Connections in triangulated structures

- a) Eccentric connections:
 - b) Connections at interconnection
 - c) Splices in tension members and compression members of non bearing type
 - d) Splices in compression members of bearing type :
- From sl. no. a to d are covered in **IRC:24-2010 code**.

11.2.3.4 Rivets and bolts

- a) Gross and net areas of rivets and bolts:
 - b) Calculation of stresses:
 - c) Diameter of rivet and bolt holes :
 - d) Edge distances:
 - e) Pitch of rivets or bolts:
 - f) Long rivets :
 - g) Rivets with counter sunk head:
 - h) Rivets or bolts through packing:
 - i) Staggered pitch:
- From sl. no. a to i are covered in **IRC:24-2010 code**.

12.0 FABRICATION AND INSPECTION:

12.1 All work shall be in accordance with the drawings and clause of the Ikc code IRC:24-2001 unless otherwise agreed.

12.2 Laminations in Plates :

Covered in IRC code no. IRC:24-2010

12.3 Storage of Materials:

Covered in IRC code no. IRC:24-2010.

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12.4 Straightening, Bending and pressing:

Covered in IRC code no. IRC:24-2010

12.5 Workmanship:

Covered in IRC code no. IRC:24-2001.

12.6 Inspection and Testing:

No protective treatment shall be applied to the work until the appropriate inspection and testing has been carried out. The stage inspection shall be carried out of all operations so as to ensure the correctness of fabrication and good quality.

12.6.1 Testing of Material

Structural steel shall be tested for mechanical and chemical properties as per various IS as may be applicable and confirm to requirements specified in IS:2062-1984, IS:11587-1986, IS: 1977-1973, IS:8500-1977 or all codes of IS of latest revision.

12.6.2 Rivets , bolts, nuts washers, welding consumables steel forging,, casting and stainless shall be tested for mechanical properties as applicable and shall confirm to requirements, as specified in the appropriate Indian Standard.

12.6.3 Rolling and cutting tolerance shall be as per IS:1852, The thickness tolerance check measurements for the plates and rolled sections shall be taken at not less than 15mm from edge.

12.6.4: lamination plates

Lamination in plates shall be carried out for areas specified in clause of IRC24-2010 By ultrasonic testing or any other specified methods. Flame cut edges without visual sins of laminations need not to be tested for compliance with clause 12.2 unless specified otherwise by the Engineer-in-Charge.

12.6.5 Steel work shall be inspected for surface defects and exposed edge laminations during fabrication and blast cleaning. Significant edge laminations found shall be reported to the Engineer-in-Charge for his decision.

Chipping, grinding, machining or ultrasonic testing shall be used to determine depth of imperfection.

For dynamically loaded structures recommended criteria for allowable discontinuities for edge defects and the repair procedure shall be as given in table of IRC:24-2010, until and unless specified otherwise. The weld procedure shall be as appropriate to the material.

12.6.6 Measurement of curvature and camber :

Covered in IRC code no. IRC:24-2001

12.6.7 Tolerance for drilled and reamed holes :

Covered in IRC code no. IRC:24-2001

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12.6.8 Bolted connections :
Covered in IRC code no. **IRC:24-2001**

12.6.9 Alignment of joints :
Covered in IRC code no. **IRC:24-2010**.

12.5.10 Welding and welding connection :

Welders qualification test shall be carried out as per requirements laid Down in IS: 7318 (Part-I), for respective approved welding procedure, they shall satisfy Relevant requirements of IS: 7310(Part-I).

Welding procedure. welded connection and testing shall be in compliance of requirements as per IRC:24-2010.

12.6.7 All metal arc welding shall be in compliance with IS:9595 provisions.

12.6.8 The method of inspection' shall be according to IS:822-1970- and extent of inspection Procedure tests; and testing shall be in accordance with the relevant standards or in the absence of such standard, as agreed with the Engineer-in-charge.

12.5.10 Non-Destructive testing of welds :

One or more of following methods may be applied for inspection or testing of weld.

The destructive and Non Destructive test of weld shall be carried out according to IS:7307 (Part I).

i) Visual inspection : All welds shall be visually inspected, which should cover all defects of weld, such as size, porosity, crack in the weld or in the HAZ (Heat affected Zone), etc. Suitable magnifying glass may be used for visual inspection. A weld shall

be acceptable by visual inspection if it shows that :

a) The weld has no crack

b) Through fusion exist between weld and base metal

c) Weld profiles are in accordance with requisite causes IS:9595 or as per Engineer-in- Charge.

d) The weld shall be of full cross-section, except for the ends of intermittent fillet welds outside of their effective length.

e) when weld in transverse to the primary stress, undercut shall not be more than 0.8 mm deep when the weld is parallel to the primary stress in the part that is under cut

f) The fillet weld in any single continuous weld shall be permitted to under-run the nominal fillet weld size specified by 1.6mm without correction provided that under-size portion of the weld does not exceed 10 per cent of the length of the weld. On the web to flange welds on girders, no under-run is permitted at the ends for a length equal to twice the width of the flange.

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g) The piping porosity in fillet welds shall not exceed one in each 100 mm of weld length and the maximum diameter shall not exceed 2.4 mm, except for fillet welds connecting stiffeners to web where the sum of diameters of piping porosity shall not exceed 9.5 mm in any 25 mm length of weld and shall not exceed 19 mm in any 300 mm length of weld.

12.6.11. Magnetic particle and radiographic inspection :

Covered in IRC code no. **IRC:24-2010**.

12.6.12 Acceptance criteria :

Covered in IRC code no. **IRC:24-2010**.

12.6.13 Ultrasonic inspection:

Covered in IRC code no. **IRC.24-2010**.

12.6.14 Liquid penetration inspection :

Covered in IRC code no. **IRC:24-2010**.

12.6.15 Resting of welding for cast steel:

Covered in IRC code no. **IRC:24-2010**

12.6.16 Stud Shear Connectors :

Covered in IRC code no. **IRC:24-2010**.

12.6.17 Inspection of members and components.

Inspection requirement :

Covered in IRC code no. **IRC:24-2010**.

12.6.18 Inspection stages:

Covered in IRC code no. **IRC:24-2010**.

12.6.17 HANDLING, TRANSPORTATION AND ERECTION :

To followed guidelines of general nature for handling, transportation and erection of bridges and their components.

12.6.18 Transportation and Handling :

Covered in IRC code no. **IRC:24-2010**.

12.8 Storage :

Covered in IRC code no. **IRC:24-2010**.

12. 9 Handling:

Covered in IRC code no. **IRC:24-2010**.

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12.10 Erection Scheme:

Covered in IRC code no. **IRC:24-2010**

12.11 Procedure of erection

covered in IRC code no. **IRC:24-2010**.

12.12 Joints :

Covered in IRC code no. **IRC:24-2010**.

12.13 The design of various EIRCIS codes. components of the bridge, in general are based on provision Wherever IRC code is silent, reference is made to other Indian Railway)/International codes and standards.

The list of IRC Codes (required latest revision)

- i) IRC:5 Section I
- ii) IRC:6 Section II
- iii) IRC: 21 Section III
- iv) I RC: 22 Section VI
- v) RC : 24 Section V
- vi) IRC:78 Section VII
- vii) IRC:83 PartIII Section IX
- viii) IS :2911 part I/section-II
- ix) IS : 8009-(part II)
- x) IS :6403-(part II)
- xi) IRC:37

12.14 Loading

- i) Dead Load IRC:6- 2014 Wt. 25000N/sqm for conc. and 7.85t/cum for steel
- ii) Super imposed dead load IRC:6- 2014
- i) Carriageway and safety kerb load
2-lane carriageway : 1-lane and 2-lanes of class A/1 lane of class 70R conforming to IRC: 6
3- lane carriageway:1-lane , 2-lanes and 3-lanes of class A/1 lane of class 70R / 1 lane class70R = 1 Lane class A conforming to IRC:6- 2014
4-lane carriageway: 1-lane, 2-lanes, and 3-lanes and 4-lanes of class A/1- lane of class 70R / 1-lane class70R +2 Lane class A conforming to IRC:6- 2014

12.15 Temperature loading and Temperature Gradient

The temperature variation of +/- 25 degree shall be considered as per IRC:6- 2014 Coefficient of thermal expansion 11.7×10^{-6} as per IRC:6- 2014

Poisson's Ratio = 0.15 Modulus of Elasticity as per Table 8 of IRC: 21-2000

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12.16 Breaking Force :

The braking forces for multi/single lane vehicle for successive trains have been considered as per IRC:6- 2014

12.17 Vehicle collision load

Substructure and foundation shall be designed with vehicle collision loads as per clause 225 of IRC:6- 2014

12.18 Seismic Loading

The structure shall be designed for seismic forces as per Zone - IV of Seismic map as per IRC published in Indian Highway.

12.19 Wind Load

Wind load has been considered as per Clause 212 of IRC ;6-2014. Basic wind pressure of IRC6-2014. For live load a line load of 300Kg/sqm has been considered . In addition as per clauses 212.6. of IRC6-2014 structure has been designed for linear load of 450 Kg/sqm.

12.20 Durability and Maintenance consideration

- i) Design for replacement of bearings. Jack position for replacement of bearing
- ii) The end cross Diaphragm shall be designed for the jack up position for replacement of bearing.

12.21 Concrete Grades and reinforcement

- i) Reinforced concrete deck : M35
- ii) Pier and pier cap and Abutments:M40
- ii) Crash Barrier :M40
- iv) All PCC leveling Course : : M20

12.22 Grade of Structural Steel : Fe 540 B conforming to IS: 1786 shall be Provided
Reinforcement Steel : HYSD bars (Grade Fe415)

The minimum cover to reinforcement shall be determined from the recommendations of IRC: 21-2000 taking into account the local environmental conditions

Element	: Clear Cover to reinforcement
Concrete deck for approach portion	: 40mm
Pier and Pier cap and abutment	: 50mm
Piles and piles cap	:75 mm

12.23 Wearing coat

Wearing coat shall comprise of 25 mm mastic asphalt over 40 mm bituminous concrete.

12.24 Bearing

The bearing shall be POT-PTTFE type. But for small span, elastomeric bearing shall be used.

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12.25 Reinforced Earth Retaining wall

All reinforced Earth work shall be done in conformity to the MOSRTH "Specifications for road and Bridge works : 5" revision (2013), section 3100. The detailed design and drawings of the work done in accordance to BS; 8006 "Strengthened/Reinforced soil and other fills". The design will also cater for single lane IRC Class 70R, two lane class A or combination of the two High adherence ribbed carbon Steel strips with cruciform shaped panels are used for reinforced earth works.

13. MASTIC PREPARED IN PLANT (MECHANISED Mastic)

The plant shall facility for correct proportion of various components, heating and mixing them thoroughly so as to ensure the supply at required rate for laying on site. It shall function without violating the environmental norms of noise and dust pollution.

The various components of the mixing plants shall be:

- a) **Cold Storage Bins:** These bins shall consist of several components for aggregates like sand, stone chips etc. These materials shall flow down on the conveyor belt at controlled rate from the openings kept at their bottom.
- b) **The Drier:** This shall be an insulated rotating inclined steel cylinder fired by burners. The materials from the conveyor belt shall be fed into it so that they attain the temperature specified. All organic impurities shall get burnt and moisture if any removed. Temperatures of upto 250°C shall be achieved in the drier.
- c) **Hot Bin:** The hot aggregate from the drier shall be elevated and poured in the hot bin by means of hot bucket elevator. This bin shall be kept at sufficiently above the mixer drum stores hot aggregate from the drier and the limestone powder from lime feeder until it is poured in the mixer drum. The limestone powder shall be fed from the hot lime bin by screw type elevator.
 - i) The temperature of the material in the hot bin shall be maintained by a hot oil jacket or high density insulation.
 - ii) The bin shall have a capacity of ten batches say about 20 tons and the weight shall be controlled by the sensors provided from the control room.
- d) **Bitumen Storage Tank:** The temperature of the bitumen shall be kept at about 170°C by burners provided for the tank.
- e) **Hot Silo for the Lime Powder and Lime Feeder:** The bin shall be a calibrated container for lime powder which has arrangements for heating by the hot oil circulating system. The powder shall be continuously stirred by the rotating arms in the bin mounted on an axle. The hot lime powder from the bin shall be pumped into the elevated hot bin by screw elevator. The quantity to be fed shall be controlled by the contents taken in the lime bin by automatic weighing system for each batch. The screw elevator shall be provided in oil jacket to provide heat loss.

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f) **Weighing Section:** The plant shall be equipped with a weighing system suitable to weigh upto 5 different aggregates, two types of filler, bitumen and two types of additives. This shall weigh the different aggregates, filler, bitumen and additives in case required. This shall be suitable for the capacity of one batch of two tons. This section will discharge the material after weighing to the twin shaft mixer for homogenous mixing.

g) **The Twin Shaft Type Mixer with Hot Jacket:** This shall be on an elevated steel frame work at suitable height for facilitating pouring of the mix into the transporters. The mixer shall have rotating steel arms or heaters mounted on central axles and designed for efficient mixing of the bitumen and lime powder and the aggregate. The bitumen shall be pumped into the mixer from the bitumen weighing system (Equal to the requirement of one batch). While the mixing is going on in the mixer a second batch will be readied after discharging from the hot bin in the weighing section for immediate discharge to the mixer. The mixing time shall be decided depending on achieving the mix design properties as stipulated in the specifications. The mastic mix shall then be poured into the transporter by opening the outlet gate through the opening at the top of the transporter. About 60 seconds of mixing time in the mixer drum or as shall be found to be adequate as all the components are at a very high temperature and the mixing is done quite efficiently.

h) **The Control Room and Digital Control Panels:** The air conditioned control room shall control all operations of the plant through electric sensors at various locations. The proportioning of various components their temperature, the weights of lime powder, bitumen and aggregates from hot bin for each batch, mixing time etc. shall be watched and controlled through the computerized system. It shall enable the mix to be as per the job mix formulae.

i) **The Hot Oil Circulating System:** As the various components of the mix shall be kept at high temperatures specified, the heat loss in storage or conveyance from the bin to the mixer etc. shall be prevented by the hot oil circulation in the cavity in the jackets around pipes, the bins, the drums etc. For this purpose the oil shall be heated in a storage tank from which it is circulated by a pump through insulated pipes. The oil used shall be thermic oil which can upto 250°C.

j) **The Truck Mounted Transporters:** The action of mixing of the components shall continue in the transporter after the mix from the plant is poured into it. It shall have an insulated tilting steel drum provided with rotating mixing arm and heating facilities with oil fired burners for the circulating thermic oil in its jacket. Till the mix is poured on the surface to be covered by opening the outlet and by tilting the drum; the mixing operation shall continue and ensure a homogenous hot mix.

k) **The Paver:** This shall help in spreading and floatation the plastic mix uniformly on the surface to the desired width and thickness at correct grade and camber through its heated, distortion free steel float and turning sword distributors. It shall be operated by a diesel engine and by means of hydraulic system.

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The heating of the float shall be done by LPG fuelled, infrared heaters attached to it. The special profiling with precision and smoothing zones on the float or the working bar shall guarantee optimum layering conditions and results. The single extension pieces shall be changed according to the desired working width.

1) Salient Features of the Plant: It shall be possible to achieve a progress of about 2500 sqm. of work in a day with a single plant and paver. It shall produce about 15 to 20 tonnes of mix per hour.

m) Cover Chips: The cover chips passing 4.75 mm and retained on 2.36 mm sieve, should be coated with 2 percent VG 10 grade bitumen prior to the start of production each day. The bitumen coated chips shall be stored in concrete bins adjacent to the plant area and turned over periodically with a front end loader to prevent a build-up of heat.

n) Mechanized Chip Spreader: To prevent skidding of vehicles in wet weather conditions it shall be mandatory to adopt the method of applying uniform size bitumen chips, on the laid surface, through a power driven chip spreader. This unit shall be placed about 3 m behind the screed and shall apply the chips for anti-skid. The chips are carried in a hopper supplied in a supply hopper and mechanically delivered by a feed roll to the pavement at a rate of 5.4 - 8.1 kg per sqm. The chips can also be spread by hand from the back platform of the chip spreader to those areas that lacked sufficient cover.

ENVIRONMENT PROTECTION PLAN

1. The selected Bidder / Contractor shall, within 4 months of signing of Contract Agreement submit a comprehensive Environment Protection Plan to the Engineer/Employer for approval. The Plan shall contain the Plan for Construction as well as Operations and Maintenance Phases.
2. The responsibility for obtaining Environmental clearance and NOC from statutory authorities (Ministry of Environment & Forests, Govt/ WBPCB) shall lie solely with the Contractor. However, the Employer shall provide facilitations to the extent possible.
3. The Contractor shall ensure full compliance with the Environment protection norms guidelines/ rules/ regulations as prescribed by authorities agencies or as per good/acceptable practices, during the Construction as well as O&M phase.
4. Construction of elevated corridor over Kolkata Wetland side please follows the submitted EIA report to the National Wetland committee.

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Additional Information for Design and Drawing

DESIGN STANDARDS & SPECIFICATION

The following design standards and specifications have been extracted for the Design and Construction of substructure of Bailey Bridge along with allied works at Railpar, Asansol, Pachim Bhardhaman on EPC Mode Trankey Contract Basis, which are for guidance of the Selected Bidder/ Contractor for formulating the basis for engineering of the Project.

The contractor accepts that it is solely and exclusively responsible for the verification of any design, data, documents or information provided to the Contractor by the Employer, its consultants/Transaction Advisors or any Government's Authority and that it shall accept and act thereon at its own cost and risk.

The Contractor acknowledges that it had after a complete, careful and independent examination of the project, the Applicable Laws and terms of the Applicable Permits, the technical and financial aspects of the Project, the Specifications and Standards, the Project Site/Stretch and the suitability of its condition, soil and location for implementation of the Project, the availability of goods, materials and things needed for implementing Project, all the information and documents provided by Employer, its Consultants/ Transaction Advisors or any Government Authority, traffic scenario/situation, risks, consequences and criticalities involved in implementing the Project, and has determined, to its complete satisfaction, the nature and extent of such difficulties, risks and hazards as likely to arise or may be faced by the Contractor in the course of performance of its obligations are, towards the implementation of the Project.

The Contractor acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating any of the contents of the below extracts and hereby confirms that the Employer, its consultants/ Transactions Advisors or any Government Authority shall not be liable for the same, in any manner whatsoever, to the Contractor/ selected Bidder or Persons claiming through or under the Contractor/ Selected Bidder.

The specifications for works not covered by the Technical Specifications and this Section provided in the Bidding Documents shall be governed by MORTH specifications, IRC/BIS Code of practices according to the direction of the Engineer-in-Charge, Further, the Contractor shall ensure sound design and other technical parameters for the Project, all in consultation with the Engineer In-charge.

It is herewith understood that approval/ consultation of/ with Engineer- In-charge/ Employer shall not relieve the Contractor of his responsibility towards correctness of design and / or sound implementation of the Project, which will be related as incidental to the Work.

PROJECT ELEMENTS

Kolkata Metropolitan Development Authority (KMDA) [herein referred to as the "EMPLOYER"] invites application for Award of the Project for Construction of 4 lane Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahibathan (Near New Town) with Connectivity to Salt Lake Sector-V" through Engineering, procurement and construction on EPC Mode Trankey contract Basis. (Herein after referred to as the "**project**"). [Civil, Electrical and Instrumentation works] [Design, construction and operation & maintenances for 2(two) years]. The reputed bidders who find themselves complying with the Qualification Criteria of Request for Proposal /Bidding Document (RFP) are requested to submit their Bids.

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For avoidance of doubt it is here by clarified that the expression “Construction Works” unless the content otherwise requires, shall refer to the Design Construction of 4 lane Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahibathan (Near New Town) with Connectivity to Salt Lake Sector-V” within a period of 36 (thirtysix) months.

The project shall constitute the following components:-

C. 4 (four) lane Elevated corridor (2X7.5)m from E.M. Bypass near Metropolitan Housing Estate to Mahibathan (Near New Town) with Connectivity to Salt Lake Sector-V” Length 5990 m

D. Ramp-1 (UP Ramp form Sector -V beside Nalban (1X8.5m), length:- 411.16 m

C. Ramo-2 (Down Ramp towards College more (1X6.5m), Length : 370.76 m

D. Ramp-3 (Up Ramp from Salt Lake to Bypass near Ring Road(1x8.5m): 312.89 m

Cumulative Ramp Length: 1094.81 m

Total length of the Proposed Bridge = 7084.81 m

Say 7.08 K.M. approx. 7.10 K.M.

GEOMETRIC DESIGN STANDARDS:

Covered in IRC code no. IRC 73-2023

Specification and code to be followed

The design of various components of the bridge, in general based on the previsions of IRC/IS/IRS Codes. Wherever IS/IRS code is silent, reference is made to other Indian/International codes and standards. The list of IS/IRC codes (Latest Revision) & Ministry of Shipping & Transport (Road wings) Govt. of India given below will serve as a guide for the design of the substructure of the Bailey bridge.

IRC:5-Latest Version	Standard Specifications and Code of practice for road Bridges section 1- general features of design (latest Revisions)
IRC:6-Latest Version	Standard Specifications and Code of practice for road Bridges section II- general features of design (Latest Revisions)
IRC: 21- latest Version	Standard Specifications and Code of Practice for ad Bridges, Section-111- Cement Concrete
IRC: 24- latest Version	Standard Specifications and Code of Practice for ad Bridges, Section-V- Steel Road Bridges
IRC: 78-Ltest Version	Standard Specifications and Code of Practice for Road Bridges, Section-VII - Foundation and substructure (latest Version)
IS: 2911-(Part 1 /Sec 2)	Indian Standard Code of practice for Design and Construction of Pile Foundations, Part I: Concrete Piles, Section 2-Bored Cast in-situ Piles.
IS: 8009 (Part II)	Indian Standard code of practice for calculation of settlement of Foundations (Part II: Deep foundations subjected to symmetrical static vertical loading)
IS 6403	Indian Standard code of practice for calculation of Bearing Capacity for Sallow foundations.

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IS: 1024- latest Version	Use of welding in Bridges and structures subject to Dynamic Loading-Code of practice latest Version.
IS 456 -2000	Plain and Reinforced Concrete code of practice.
SP16-1980	Design aids for Reinforced Concrete design.
SP-34-1987	Hand book for Concrete Reinforcement and Detailing
IS 1893-latest Version	Criteria for Earthquake Resistant Design of Structure.
IS 875(Part-III)-Latest Version	Wind load on Building and structure.

BRICKS

As per IRC 1077 of latest revision.

STONES

As per IS 1124, IRC 21, IRC-11 of latest revision.

SAND

As per IS:2383(part-I to VIII), IS:2386(part-III) of latest revision.

CEMENT

As per IS: 269, IS: 8041, IS: 455, IS: 8112, IS: 12269, IS: 8112, of latest revision.

LOADING

Dead Load (DL)

Unit weight for Dead loads calculation shall be considered by adopting unit weight as per IRC 6 of latest revision., unit weight of concrete and steel shall be 25 KN/Cum & 78.5KN/Cum respectively.

Super Imposed Dead Load (SIDL)

Unit weight of super imposed dead load shall be in conformity with IRC:6-2000. For calculating the dead weight.

Carriageway and safety Kerb Live Load (LL)

Following load cases shall be considered in analysis and whichever severe effect shall be considered in design: is producing case 2 Lane Carriageway: 1 lane and 2 Lanes of Class A/1 Lane of Class 70R conforming to IRC 6- 2000

4 Lane Carriageway: 1 lane, 2 Lanes 3 Lanes and 4 Lanes of Class A/1 Lane, 2 Lanes of Class 70R/ 1 Lane of Class 70R +2 Lane Class A conforming to IRC 6-2000.Necessary reduction in load as per IRC: 6-2000 has been considered while more than two lane vehicle is present.

Temperature loading & Temperature Gradient

The Climatic Condition is assumed to be "Moderate". The temperature variation of t/- 25 Deg. shall be considered. The temperature gradient shall be considered as per IRC 6: 2000.

Coefficient of thermal expansion $11.7 \times 10^{-6}/C$ as per IRC: 6

Poisson's Ratio= 0.15

Modulus of Elasticity as per Table 8 of IRC: 21-Latest Revision.

Braking Force

Braking force has been calculated considering different load combination as stated in Live Load (LL) paragraph. The braking forces for multi/ single lane vehicle for successive trains has been considered as per IRC: 6

Vehicle Collision Load

Substructure and foundation has been designed with Vehicle Collision loads as stated in Clauses of IRC: 6-2014

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Expansion Joint

Strip seal type expansion joint has been proposed for every expansion joint in superstructure.

Method of Analysis of longitudinal Girder

Covered in IRC code no. IRC 24-2010 and IS 800-2017.

Method of Analysis of deck slab

The deck slab has been design as a continuous one-way slab supported on the longitudinal girders with cantilever overhang beyond the girders. Live load effects are taken based on effective width method.

Pavement Design

Covered in IRC code no. IRC 37-2018.

SUBSTRUCTURAL DESIGN STANDARDS

Substructure of Construction of 4 lane Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahibathan (Near New Town) with Connectivity to Salt Lake Sector v” through Engineering, procurement and construction on EPC Mode Trankey contract Basis

Foundation – Bored cast-in-situ reinforced concrete of minimum 1000mm dia piles

With reinforced concrete pile caps. However, it is to be based on results of the soil test to be done by the contractor, in consultation with the Engineer-in-charge.

BORED CAST IN SITU CONCRETE PILES

The design and construction of bored cast - in- situ oncrete pile shall generally by governed by recommendat recommendation of IS : 2911 (part /sec-2) latest revision and latest Publication and relevant IRC codes, Minimum diameter of pile has to be 1000 mm.

Piles shall be reinforced concrete and always reinforced for full length with a minimum area or longitudinal reinforcement of 0.4% of the outside sectional area of the permanent casing (liner) or shaft and the internal reinforcement which may be in the form of links or spirals shall have a shaft minimum diameter 8 mm with spacing minimum 150 mm. In the top of the pile, expected to take bending stress in addition to the compressive strength, the reinforcement both longitudinal and lateral shall be designed as in a column as per IRC code. The minimum clear distance between two adjacent main reinforcement shall normally be 100 mm for full depth of reinforcement cage. A minimum length of one meter of temporary casing shall be inserted in each pile.

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Percentage break up schedule for Payment

Subject:- Percentage break up schedule for the work of Construction of 4 Elevated corridor from E.M. Bypass near Metropolitan Housing Estate to Mahisbathan (Near New Town) with Connectivity to Salt Lake Sector-V” through Engineering, procurement and construction (EPC) Mode Trunkey contract Basis.

Serial No.	Description of Items	% of Project Cost	
		Sub-Break Up	Break Up
1	<u>Design and Drawings</u>		0.326%
1.1	On Completion of survey, layout, site preperation including office establishment		0.015%
a)	On Completion of Topographical Survey & Layout	0.008%	
b)	On Completion of Site preparation including office establishment	0.007%	
1.2	Submission of General Arrangement Drawing, Architectural & Landscape Drawing(Soft and Hard Copies of all drawings), one detailed scaled model(1:300) and Power Point presentation of the skywlak project of approved G.A.Drawing		0.0440%
a)	Submission of Architectural Drawings	0.009%	
b)	Submission of Landscape Drawings	0.009%	
c)	Submission of General Arrangement Drawing	0.009%	
d)	Submission of Detailed Scaled Model (1:300)	0.008%	
e)	Submission of Power Point Presentation of Approved GAD	0.009%	
1.3	Submission of Soil Investigation Report, detailed design and drawings of all structural components and fabrication drawings.		0.120%
a)	Submission of Soil Investigation Report	0.0240%	
b)	Submission of Quality Assurance Plan	0.0240%	
c)	Submission of detailed design & drawings of all structural components	0.0240%	
d)	Submission of stagewise detailed design & drawings for all formwork/falsework following relevant	0.0240%	

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		I.S. Code/I.R.C. Specification (IRC 87: 2018) in effect & direction of Engineers in charge.			
d)		Submission of Fabrication & Erection Drawings	0.0240%		
1.4		Proof Checking and Vetting of all design and drawings from reputed educational institute (such as any IIT institution) or Govt. organisation and approval of competent authroity.		0.147%	
a)		Proof Checking and Vetting of all design and drawings from reputed educational institute(such as any IIT institution) or Govt. organisation.	0.0735%		
b)		Proof Checking and Vetting of all detailed design and drawings of all formwork/falsework from reputed educational institute (such as any IIT institution, J.U., B.E.S.U. etc.) or Govt. organisation.	0.0735%		
		<u>Utility Shifting</u>			1.590%
		The Contractor at their own cost shall properly sling, support and effectively protect all such gas, water mains, sewerage, drainage and other service Pipes, gully pits, connection pipes, house drains, electric, telephones/ mobile phone service and other cables including their appurtenance structure falling within the alignment of shallow/ deep foundation within the alignment of the structures or likely to be exposed, disturbed or damaged during the execution of the work or in consequence thereof, in such a manner and as such materials as required or specified by the concerned public utility agencies and as per instruction of Engineers in-Charge hold them in proper position without any damage being caused to them during execution of work. The contractor shall have to bear the expenses of pipes, gas mains / gully pit connections / house drains and other electric telephones and other cables or any other underground structures or services falling within the shallow / deep foundation and within the alignment of the structure which may be found to have been disturbed or damaged due to the contractor's fault and / or defective and careless workmanship. The decision of the Engineers-in-Charge (EIC) in this respect shall be binding and final and all costs of rebuild or repairing of such damaged services or structures as aforesaid shall be deducted from the Contractor's bill. The foregoing will not absolve the Contractor of his	1.590%	1.590%	

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2	<u>Foundation</u>			36.190%
(i)	Providing R.C.C. cast in situ bored piles with M35 grade cement concrete using hudraulic rig based on vetted & approved drawing along with M.S. Temporary Access Bridge at Wet land zone following the guideline & recommendations of EKWMA & also performing necessary pile load tests for vertical, uplift/tension if any, lateral for both test piles & over working piles (Routine Load Test) following relevant I.S. Code/I.R.C. Specification in effect & direction of Engineers in charge.		31.000%	
a)	Installation of Initial Test Pile and performing Load Test against vertical, uplift/tension if any, lateral load.	0.074%		
b)	Providing Cast in Situ RCC Piles with HYSD bars of Fe 500 /Fe 500D, conforms to IS:1786	30.702%		
c)	Performing Routine Load tests against Vertical Load & uplift/tension (if any).	0.101%		
d)	Performing Routine Load tests against Lateral Load Test.	0.101%		
e)	Intigrity Tests over all working piles.	0.022%		
(ii)	Earth work in cutting, providing shoring, form work, sand filling & laying S.B.F.S (if required), ordinary cement concrete M15 grade, construction of R.C.C.Pile Cap, Pedestal,Tie beam following relevant I.S. Code/I.R.C. Specification in effect & direction of Engineers in charge with M35 grade cement concrete (using batching plant, transit mixer & concrete pump) and HYSD bars of Fe 500 /Fe 500D conforms to IS:1786.		5.190%	
a)	Laying formwork, shoring, sand filling & laying S.B.F.S (if required) in foundation wherever required.	0.518%		
b)	Providing & Laying Ordinary Cement Concreting for levelling Course.	0.260%		
c)	Casting R.C.C. Pile Caps, pedestal including supplying,placing,binding of corrosion resistant steel (TISCON CRS 42 or any other approved brand) reinforcing bar complete in all respect based on vetted & approved drawing and direction of Engineers in charge.	4.412%		
3	Sub-Structure			11.77%

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(i)	<p>Providing form work & staging for different R.C.C. sub-structure with M40 grade cement concrete (using batching plant, transit mixer & concrete pump), supplying, fitting and placing HYSD reinforcing steel bars in Sub-structure (Pier, Pier Protective Barrier, Pier Cap, Seismic Arrester, Bearing Pedestal including Elastomeric & POT/PTFE Bearings) , Anti Carbonation coating for protection of all exposed Concrete Surface from Carbonation by with two coats of Single component solvent free, cold applied,pure acrylic polymer, (Anticarbonation coating) breathable,elastomeric on a water based priming coat (Total 3 (three) coats including priming coats) having50% elongation property, UVresistant capacity, non-toxic with aesthetic view, ecofriendly and low VOC(Volatile Organic Compound)material. The product complies with the requirement as laid out in as per ASTM D822.Recommended DFT (Dry Film thickness): 100 -110 microns complete per coat. Top coat may have with 5%- 10% dilution if required and anti carb primer with 100% dilution with approx. DFT:20 micron. Total system DFT should not be less than 230 micron complete in all respect based on vetted & approved drawing and as per direction of Engineers in charge.</p>		11.770%	
a)	R.C.C. Pier		3.974%	
b)	R.C.C. Pier Cap		5.950%	
c)	R.C.C. Pier Protective Barrier		0.180%	
d)	R.C.C. Bearing Pedestal		0.030%	
e)	R.C.C. Seismic Arrester		0.019%	
f)	Supplying,fitting & fixing Elastomeric Bearing as per drawing and Technical Specifications IRC:83 Part II-2015 & as approved by the Engineers In Charge.		0.440%	
g)	Supplying,fitting & fixing POT/PTFE Bearing as per drawing and Technical Specifications IRC:83 Part III-2018 & as approved by the Engineers In Charge.		1.177%	
4	Super Structure			40.713%

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(i)	<p>Providing form work & staging for different R.C.C. super structure with M40 grade cement concrete (using batching plant, transit mixer & concrete pump), supplying, fitting and placing HYSD reinforcing steel bars in Sub-structure (PSC I- Girder, Cross Girder, Deck Slab, Drainage Sprouts, Crash Barrier, M.S. Railing over Crash Barrier, Expansion Joint, Drainage Sprouts & Storm Water Pipe Line in proper place) , Anti Carbonation coating for protection of all exposed Concrete Surface from Carbonation by with two coats of Single component solvent free, cold applied, pure acrylic polymer, (Anticarbonation coating) breathable, elastomeric on a water based priming coat (Total 3 (three) coats including priming coats) having 50% elongation property, UV resistant capacity, non-toxic with aesthetic view, ecofriendly and low VOC (Volatile Organic Compound) material. The product complies with the requirement as laid out in as per ASTM D822. Recommended DFT (Dry Film thickness): 100 - 110 microns complete per coat. Top coat may have with 5%- 10% dilution if required and anti carb primer with 100% dilution with approx. DFT: 20 micron. Total system DFT should not be less than 230 micron in all respect based on vetted & approved drawing and as per direction of Engineers in charge.</p>		13.755%	
a)	R.C.C. PSC I-Girder			
i)	Casting R.C.C. PSC I-Girder with M40 grade design mix concrete,, approval of the same by the Engineers-in-Charge and cost for quality control, sampling, testing including the cost of necessary form work and staging etc. all complete as per drawing and technical specification of IRC : 112	7.955%		
ii)	Supplying & laying High Tensile Steel wires / Strands including all accessories for stressing, stressing operations and grouting with end capping complete as per drawing and Technical Specifications of IRC : 112 / IS:6006 / IS:14268 in effect.	3.500%		
iii)	Erection of PSC I-Girder in proper place with true to line & level as per approved drawing and Technical Specifications of IRC : 112 by maintaining all required safety measures	2.300%		

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(ii)	Providing, fabricating, transporting to site, Assembling and erection / launching, inspection, testing of girders in stages by nominated inspection agency of M.S. structural works for long & cross girders, bracings, vertical and horizontal stiffener, gusset plate, supplying & fixing of HSFG / High strength bolts & nuts including any structural work using section made of rolled steel plates, cleat angle (if required) etc. as per IRC:24-2010 and approved drawing & design along with grit blast cleaning or centrifugal blasting with a suitable abrasive materials like crushed slag in accordance with clause-III of IS 6586 : 1989 and supplying & applying of zinc phosphate primer followed by finish coat of micaceous iron oxide pigmented drying oil type paint of total DFT 165µm. and approval of Engineers in Charge		12.698%	
a)	Supply of Structural Steel :			
i)	Supply of structural steel for girders plate, Bracings, vertical and horizontal stiffener, gusset plate including structural work etc.	5.898%		
b)	Fabrication of Structural Steel Members:			
i)	Fabrication of welded steel girder as per approved drawing duly made up built up sections of MS Plate, Angle, Channel of different thickness including metalizing priming coat followed by finish coat of paints for all steel structural members.	3.300%		
c)	Erection of Structural Steel Members :			
i)	Assembling, erection / launching of fabricated steel girders in proper position, line, level, alignment including erection of staging and scaffolding, dismantling the same after completion of work.	3.500%		
(iii)	Deck Slab		9.000%	

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i)	Casting of deck slab with M40 grade cement concrete (using batching plant, transit mixer & concrete pump), supplying, fitting and placing HYSD reinforcing steel bars, approval of the same by the Engineers-in-Charge and cost for quality control, sampling, testing including the cost of necessary form work and staging, Anti Carbonation coating for protection of exposed Concrete Surface(underneath/soffit of Deck)from Carbonation by with two coats of Single component solvent free, cold applied,pure acrylic polymer, (Anticarbonation coating) breathable,elastomerlc on a water based priming coat (Total 3 (three) coats including priming coats) having 50% elongation property, UVresistant capacity, non-toxic with aesthetic view, ecofriendly and low VOC(Volatile Organic Compound)material. The product complies with the requirement as laid out in as per ASTM D822.Recommended DFT(DryFilmthickness): 100 -110 microns complete per coat. Top coat may have with 5%-10% dilution if required and anti carb primer with 100% dilution with approx. DFT:20 micron. Total system DFT should not be less than 230 micron all complete as per drawing and technical specification of IRC : SP 66-2016	9.000%		
(iv)	R.C.C.Crash Barrier, R.C.C. Median over Deck Slab including noise barrier		2.407%	
i)	Casting of R.C.C. Crash Barrier,R.C.C. Median with M40 grade cement concrete (using batching plant, transit mixer & concrete pump), supplying, fitting and placing HYSD reinforcing steel bars, approval of the same by the Engineers-in-Charge and cost for quality control, sampling, testing including the cost of necessary form work and staging, Anti Carbonation coating for protection of all exposed Concrete Surface from Carbonation by with two coats of Single component solvent free, cold applied,pure acrylic polymer, (Anticarbonation coating) breathable,elastomerlc on a water based priming coat (Total 3 (three) coats including priming coats) having50% elongation property, UVresistant capacity, non-toxic with aesthetic view, ecofriendly and low VOC(Volatile Organic Compound)material. The product complies with the requirement as laid out in as per ASTM D822.Recommended DFT(DryFilmthickness): 100 -110 microns complete per coat. Top coat may have with 5%-10% dilution if required and anti carb primer with 100%	1.100%		

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		dilution with approx. DFT:20 micron. Total system DFT should not be less than 230 micron etc. all complete as per drawing and technical specification of IRC : SP 199-2015			
iii)		Supplying,fitting & fixing M.S.Railing over Crash Barrier as per drawing and technical specification including metalizing priming coat followed by finish coat of paints.	0.150%		
iii)		Supplying, fitting, fixing & erecting of Noise Barriers in proper position above both side crash barriers at Wet land zone alongwith supportive MS/Aluminium structure complete in all respect based on vetted, approved drawing, appropriate specification with satisfying the guideline & recommendations of EKWMA and approval of Engineerss In Charge.	0.657%		
iv)		Supplying, fitting, fixing & erecting of Noise Barriers in proper position (1.2m. Height) above both side crash barriers at non wet land zone alongwith supportive MS/Aluminium structure complete in all respect based on vetted, approved drawing, appropriate specification along with satisfying the guideline & recommendations of WBPCB and approval of Engineerss In Charge.	0.500%		
(V)		Expansion Joint		2.000%	

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i)	Supplying, fitting & fixing expansion joint all complete as per approved drawing, design and satisfying technical specification of IRC:SP:69-2011. The expansion joint to be installed at every alternate span for R.C.C./P.S.C. Girders & Deck and at each span of composite super structural part i.e. at steel Girders with R.C.C Deck portion. For continuous joint portion i.e. for R.C.C./P.S.C. Girders & Deck the intermediate joint should be constructed following	2.000%		
(vi)	Drainage Sprouts & Storm Water Pipe Line		0.750%	
i)	Supplying, fitting and fixing approved type of materials complete as per drawing and Technical specification vide clause no. 2705 of MoRT&H's Specification for Road & Bridge Works with heavy duty gratings in proper position and construction with arrangements of rider stormwater pipe line , supplying, laying of 1000 mm. dia DWC High Density Polyethelene Pipes conforming to IS 16098 (Part-II):2013 having Stiffness Class of SN 8 with Ring Stiffness not less than 8.00 KN/Sqm. and Impact Resistance TIR value not more than 10% including necessary jointing materials & 900mm. dia RCC (NP3) Pipe at atgrade road for non-wetland portion of bridge alignment & wetland portion(RAMSAR Area) respectively by maintaining guideline & instruction of EKWMA for drainage from deck slab to appropriate drain.	0.750%		
(vii)	Downtake pipe		0.103%	
i)	Supplying, fitting & fixing P.V.C. Rain water down Pipes (100mm dia, medium duty) conforming to A.S.T.M.D. 1785, for both exposed & underground drainage purpose and G.I. Valley gutter (perimeter not less than 750mm with 225mm lap) as per direction of Engineers in charge.	0.051%		
ii)	Supplying of UPVC pipes, fitting and fixing conforming to IS-13592-1992 for U.P.V.C. pipes for above ground work including cost of jointing materials etc. fitting and fixing all necessary specials, cutting pipes, cutting holes in walls or R.C. floor where necessary and mending good all damages including the cost of masonry or concrete work(if necessary), including the cost and fitting and fixing holder bat clamps (any floor) or for underground work & including cutting trenches upto 1.5 metre and refilling the same complete as per direction of the	0.052%		

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		Engineers in- charge.			
5		Ramp Area along with R.C.C.Retaining Wall & Approach Slab , Repairing, Strengthening & Restoration alongwith median beautification of At Grade Road .		6.243%	6.243%
i)		Earth work in cutting, providing shoring, form work & laying S.B.F.S (if required), ordinary cement concrete M15 grade Casting of R.C.C. Retaining wall & approach slab providing weep holes with M35 grade cement concrete (using batching plant, transit mixer & concrete pump), supplying, fitting and placing HYSD reinforcing steel bars & approval of the same by the Engineers-in-Charge and cost for quality control, sampling, testing including the cost of necessary staging etc. all complete as per drawing and technical specification of IRC : 040.	0.300%		
ii)		Sand filling in foundation trenches and at the back of abutments, wing-walls etc. with good local sand free from earth in layers not exceeding 15 cm. including inundating each layer by profuse water and poking and ramming layer by layer complete including supply of sand. Quality of sand is to be approved by the Engineers-in-charge.	0.266%		
iii)		Providing and laying of Filter media with granular materials/stone crushed aggregates/brick aggregates /river bed materials satisfying the requirements laid down in clause 2504.2.2 of MoRT&H Specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and technical specification.	0.053%		
iv)		Dismantling of flexible pavements and disposal of dismantled materials upto a lead of 100 m, stacking serviceable and unserviceable materials separately as per Technical Specifications Clause 202 for Rural Roads of MORD. (II) By Mechanical Means	0.053%		

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		Bituminous Courses			
v)		Dismantling kerb stones & Channels by manual means and disposal of dismantled material with all lifts and upto a lead of 1000 m as per Technical Specification Clause 202 for Rural Roads of MORD.	0.053%		
vii)		Box cutting or filling in Road embankment in all sorts of soil including spreading the spoils properly over the flank as necessary or on berm to approximate grade & camber and rolling the sub-grade with power roller to proper camber and grade as per direction and satisfaction of Engineers-in-charge including uprooting and removing plants and jungles when and where necessary.	0.266%		
viii)		Construction of granular sub-base by providing graded material, mixing in Wet Mix Plant at OMC, carriage of mixed material to work site, spreading in uniform layers with Motor grader on prepared surface in proper grade and camber, compacting with vibratory power roller to achieve the desired density, including lighting, guarding, barricading, including cost of all materials, machinery, tools and plants and cost of quality control complete as per Clause 401 of Specifications for Road & Bridge Works of MoRT&H (5th Revision).	0.531%		
ix)		Wet Mix Macadam Base Course Providing, laying, spreading and compacting graded stone aggregate to Wet Mix Macadam specification including screening of aggregates and granular materials, premixing the material with water at OMC in Wet Mix Plant, carriage of mixed material by tipper to site, laying in uniform layers with Paver in Sub- base / Base course on well prepared surface and compacting with Vibratory Roller to achieve the desired density, including supply of all materials, machinery, fuel and lubricants, including incidental costs for lighting, guarding, barricading, making earthen bundh to protect the edges including cost of quality control complete as per Clause 406 of Specifications for Road & Bridge Works of MoRT&H (5th Revision).	0.531%		

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x)	<p>Prime Coat:Providing and applying primer coat with Cationic Bitumen Emulsion of approved grade conforming to IS:8887-1978 and requisite quantity on prepared surface of granular base including cleaning of road surface and spraying primer using Mechanical means including cost and carriage of bitumen emulsion and all other incidental costs of work complete as per Clause 502 of Specification for Road & Bridge Works of MoRT&H (5th Revision). For WBM / WMM Surface:(with primer @ 0.85 kg/sqm)granular base including cleaning of road surface and spraying primer using Mechanical means including cost and carriage of bitumen emulsion and all other incidental costs of work complete as per Clause 502 of Specification for Road & Bridge Works of MoRT&H (5th Revision). For WBM / WMM Surface:(with primer @ 0.85 kg/sqm)</p>	0.133%		
xi)	<p>Dense Bituminous Macadam : Providing and laying dense bituminous macadam with Hot Mix Plant producing an average output of 75 tonnes per hour using coarse aggregate, fine aggregate, filler and bituminous binder as per design Job Mix Formula conforming Marshall Method as per specification, including screening, cleaning of chips and preparing a uniform and quality mix in Hot Mix Plant and ensuring a homogeneous mix, in which all particles of the mineral aggregates are coated uniformly, transporting the hot mix to work site, laying the mixed materials at specified laying temperature with a hydrostatic paver finisher with sensor control to the required grade, level and alignment over prepared surface coated with tack coat, rolling with smooth wheeled, vibratory and tandem rollers for break down, inter-mediate and finished rolling to achieve the desired density of at least 98% of that of Laboratory Marshall specimen, hand packing and pinning to give an even surface including cost and carriage of bitumen, coarse and fine aggregates and filler materials and hire charges of machinery and equipment for construction and quality control, fuels and lubricants and wages of operational staff complete as per Clause 505 of Specifications for Road & Bridge Works of MoRT&H (5th Revision). B. For Grading 2 (26.5 mm nominal size, 50-75 mm thick.) (i) Using Batch Type HMP of minimum capacity 100-120</p>	1.062%		

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		TPH.			
xii)		Tack Coat: Providing and applying tack coat with Cationic Bitumen Emulsion of approved grade conforming to IS: 8887-1978 on the prepared surface cleaned with Hydraulic broom, moistening the surface including cost and carriage of emulsion, hire charges of machinery and labour, cost of fuel and lubricants all complete as per Clause 503 of Specifications for Road & Bridge Works of MoRT&H (5th Revision). On Bituminous Surface(with primer @ 0.25 kg/sqm)	0.133%		
xiii)		Bituminous Concrete : Providing and laying bituminous concrete with Hot Mix Plant using coarse aggregates, fine aggregates, filler materials and bituminous binder of required specification including screening, cleaning of chips and preparing a uniform and quality mix in Hot Mix Plant and ensuring a homogeneous mix, in which all particles of the mineral aggregates are coated uniformly, transporting the hot mix to work site, laying the mixed materials at specified laying temperature with a hydrostatic paver finisher with sensor control to the required grade, level and alignment over prepared surface coated with tack coat, rolling with smooth wheeled, vibratory and tandem rollers for break down, inter-mediate and finished rolling to achieve the desired density of at least 98% of that of Laboratory Marshall specimen, including cost and carriage of bitumen, coarse and fine aggregates and filler	1.062%		

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		materials and hire charges of machinery and equipment for construction and quality control, fuels and lubricants and wages of operational staff complete as per Clause 507 of Specifications for Road & Bridge Works of MoRT&H (5th Revision).A. For Grading 1 (19 mm nominal size, 50 mm thick.) (i) Using Batch Type HMP of minimum capacity 100-120 TPH.		
xiv)		Mechanized Mastic Asphalt Providing and laying Mechanized Mastic asphalt wearing course with paving grade bitumen meeting the requirements given in table 500-29 using approved coarse aggregate, fine aggregate, filler material and bitumen, prepared by using Mastic cooker including cost and carriage of all ingredients, cost of heating aggregates and binder, mixing in specified proportions conforming to approved Job Mix Formula and laid to required level and slope after cleaning the surface, compacting, sealing the construction joints and surface finishing conforming to specifications including providing antiskid surface with bitumen pre-coated fine-grained hard stone chipping of 13.2 mm nominal size at the rate of 0.005 cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces not less than 100°C, protruding 1 mm to 4 mm over mastic surface, including the hire charges of all tools and plants and machinery, pay of operators, cost of fuel and lubricants and all other incidental charges and quality control all complete as per Clause 516 of Specifications for Road & Bridge Works of MoRT&H (5th Revision). (i) 25 mm thickness	1.500%	

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xv)	Median beautification of At grade road with filling of median by good earth including supplying, fitting, fixing of required numbers of Astroturf Sculptures as proposed & recommended by competent authority of KMDA, planting of hedge, mexican grass/carpet & different plant / trees Supplying well grown plants bushy and healthy, minimum height as specified i.e. exposed height including all leads & lift, carriage, handling, manuring, applying presticide and fertilizer etc. , with proper maitenance for 5 years.	0.300%		
6	Finishing works		0.154%	0.154%
i)	Providing and fixing of retro- reflectorised cautionary,mandatory and infromatory sign as per IRC :67 made of high intensity grade sheeting vide clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 gradcement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing and Clause 801 of Specifications for Road & Bridge Works of MoRT&H (5th Revision) and approval of Engineerss In Charge.	0.010%		
ii)	Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per Clause 803 of Specifications for Road & Bridge Works of MoRT&H (5th Revision).	0.048%		

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iii)	<p>Supplying & fixing of Raised Pavement Markers /Road Studs / Cats Eye made of polycarbonatemoulded body and reflective panels with micro prismatic lens capable of providing total internalreflection of the light entering the lens face which shall support a load of 13635 kg tested inaccordance to ASTM D 4280 Type H and complying to clause no 804 of MoRT&H's specification for Road &Bridge Works (Fifth Rev.). Marker height shall not be less than 10 mm and shall not exceed 20 mm, width shall not exceed 130mm and with minimum reflective area of 13 sq.cm. on each side and slope to the base shall be 35 ± 5 degree. Fixing will be without nails but by using epoxy resin based adhesive as per manufacturer's recommendation including site clearance etc. and complete as directed by the Engineers in Charge .The contractor will have to provide a test certificate from areputable national/international laboratory conforming the above specifications.</p>	0.026%		
iv)	<p>Construction of cement concrete kerb with channel with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M10 grade foundation 150 mm thick, kerb channel 300 mm wide, 50 mm thick in PCC M20 grade, sloped towards the kerb, kerb stone with channel laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 409 of Specifications for Road & Bridge Works of MoRT&H (5th Revision). inclding cost of all materials, labour, hire and usage charges of machinery , all incidental charges, painting of Kerbs applying One coat Exterior grade Acrylic primer & "Construction of cement concrete kerb with channel with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M10 grade foundation 150 mm thick, kerb channel 300 mm wide, 50 mm thick in PCC M20 grade, sloped towards the kerb, kerb stone with channel laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 409 of Specifications for Road & Bridge Works of MoRT&H (5th Revision) inclding cost of all materials, labour, hire and usage charges of machinery , all incidental charges, painting of Kerbs applying one coat Exterior grade Acrylic primer & Two coats of Protective and Decorative Acrylic exterior emulsion paint of approved brand, quality.</p>	0.010%		

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v)	Overhead Signage Gantry: Providing and erecting overhead signs with a corrosion resistant 2mm thick aluminium alloy sheet reflectorized with high intensity retro-reflective sheeting of encapsulated lens type with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.6 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans (Reference to MORT&H's specification 802).	0.060%		
8	<u>Maintenance cost</u>		1.244%	1.244%
	1 year : (Next year from completion of work)	0.084%		
	2 year : (Next year from completion 1 year)	0.170%		
	3 year : (Next year from completion 2 year)	0.250%		
	4 year : (Next year from completion 3 year)	0.330%		
	5 year : (Next year from completion 4 year)	0.410%		
9	<u>Instrumentation Cost</u>			0.750%
	a) Instrumentation as per the best industrial practices and as per the instruction of EIC.in appropriate places and in required number.	0.750%	0.750%	
10	<u>Electrical Cost</u>		1.0200%	1.020%
i)	Supply and installation of 7 to 8 MTRS GI OCTAGONAL POLEFABRICATED PART AS PERDIMENSION :TOP DIA - 70 mm,BOTTOM DIA -155 mm,SECTION - 1 nos (SECTIONLENGTH - 9000 mm)THICKNESS - 4 mm, BASEPLATE - 260 mm x 260 mm x16 mm on RCC foundation including supplying FOUNDATION BOLT - M24 x 750 mm x 4 nos 'J' type bolts, 1.5 mtr long single/twin arm bracket, pole cap with 48.3 mm dia pipe as per specification and direction of EIC. (make-Transrail/Bajaj/Valmont)	0.1960%		
ii)	Supply, Fixing and testing of LED Luminaries 150W-200W- (120-270)V operating, CCT-5700K, 145Lm/W. With CRI – 70. 50Hz, 0.95p.f.,efficacy should be >140 Lumens / watt, 4Kv internal and 10KV external SPD, IP66 protected Taughned glass,incl. internal connection	0.1730%		

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		with 3x1.5Sqmm copper wire illumination as per technical specification and direction of EIC.(Make-hilips/Crompton/Bajaj) &			
iii)		Supply and Laying of PVC / XLPE insulated armored/un-armoured aluminium conductor cable heavy duty of 1.1KV grade : 4 Core 16 Sq, 4C 50 Sqmm, incl. Socketing and finishing the end termination as per technical specification and direction of EIC. (Make-Glosters/Havels/ Polycab)	0.1230%		
iv)		Supply and fixing of IP 65 protection PVC Loop box with high grade connector incl. DP MCB and its internal connection with copper wire. Make-Syntax	0.0300%		
v)		Supplying, fitting and fixing of laying of 40mm dia HDPE Roll pipes for under ground work of approved make (medium duty) upto 760 mm below surface in all sorts of soil and refilling the same as directed complete in all respect.	0.0300%		
vi)		Earthing with 50mm dia earth electrode and connecting all the equipments(Pole, Piller box etc.) by 25/6 mm Hot deep GI Strip including suitable galv. M.S. clamps, nuts, bolts, washers for end termination- filled with bitumen and restoring the surface duly rammed as per approved drawing.	0.0820%		
vii)		Supply & Erection of big size feeder pillar box of Size (1372 x 914 x 607 mm) made up of 3.15 mm thick MS Plate along with suitable M.S. Angle. The P.B. have double hinge door at the front & back with suitable locking arrangement. The box will be painted by 2 coat of Al. paint . incl. fixing of Timer, contactor unit, fuse unit & other accessories of suitable rated with internal wiring. Leg of the pillar box will be 900 mm in length by made up of (35x35x3 mm MS Angle with suitable base Plate. Legs of the Pillar box will be erected at 300 mm below the ground level with cement concrete (6:3:1). Rest portion covered by 5" Brick Wall with plastering & net cement & bottom portion filled with silver sand as drawing & direction of E.I.C.	0.0100%		
viii)		Supply and installation of LED Strip light rapping on pole , arm bracket and railing, out door type IP 65 grade with driver and small size loop box and its connecting wires as per specification, direction & satisfaction of EIC.	0.1530%		

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ix)	<p>Attending/inspection of Street Light installation under the maintenance group every morning and evening, glowing of maximum Nos. of luminaries through existing timer arrangement /manually as applicable as per direction of EIC including repairing of minor faults, replacement of fuse wires, cut out wiring in Pillar box, replacement of Main switch, Timer etc, removal of unauthorised tappings if any, providing temporary catenary wire connection when required and also attending of OH terminations to the OH catenary system and any other fault to restor the system including re-adjustment/relocation of tilted/rotated luminaries by arranging ladder scaffolding etc other than replacement of spares of luminaries as and when required as per direction and satisfaction of EIC.</p>	0.1530%		
x)	<p>Supply, Delivery & installation on pole or iron structure for entire Flyover 1080P High Definition H.264 IP WeatherProof IR Bullet Camera, 1080P high resolution, H.264, and MJPEG simultaneously (Dual-encoders), H.264 high profile – saves bandwidth and storage, True Day/Night (with IR-cut filter), WDR, 3DNR, DC IRIS, and Anti-flicker, IR beam up to 50m, Comprehensive I/O ports: audio in, audio out, video out, Alarm In, Alarm Out, RJ45, SD card slot, RS485, Built in Power over Ethernet (PoE); 100Base-T Ethernet, Event triggering – camera tampering, Motion detection, Network loss, Alarm Input, Video loss, Event trigger action – SNAP, Record video in SD card, send to FTP, send to Email, External output activation, voice alert, notify to CMS, Edge storage – up to 32G with Honeywell Universal Surveillance (HUS) Platform and NVRs, IP66, ONVIF profile incl. 24 core optical fiber cable with protection pipe, box, single mode dual core media converter, 50" 4K UHD (3,840 x 2,160) with stand, Refresh Rate: 60 hertz, X Reality Pro HDR Live Colour Display Motionflow XR100 Connectivity: 3 HDMI ports to connect set top box , required capacity Hard Drive, 9U Rack at server room in adequate quantity and with all necessary accessories as per technical specifications and direction of EIC. (Make: camera-Honeywell/Hikvision. Fiber- Dlink, Media converter-Tplink, TV- Sony/LG/Samsung)</p>	0.0510%		
xi)	<p>Connection charges of electricity as per required load capacity for Flyover</p>	0.0100%		

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xii)	Supply and installation of Polycarbonate signal aspects of size 300mm.dia. including Light Emitting, Diode (LED) display units, visor lenses of appropriate colour brackets, frame works, clamping bars, flexible wires, flexible pipes etc. for side mounting, wiring etc. for per aspect of signal head with its blinking control device In solar panel arrangements and power supply connection at strategic positions of flyover as per direction of EIC.	0.0090%		
	TOTAL	100.000%	100.000%	100.000%

PREVENTIVE MAINTANANCE GUIDELINES

4.1 General

While the follow-up action inspection report and its recommendations should be taken up for the upkeep of the various components of the proposed elevated corridor in sound condition, a routine maintenance work irrespective of any defects will be carried out regularly for certain components to prevent deterioration. This chapter provides the guidelines for routine maintenance and the schedule for maintaining the Elevated corridor with all up & down ramps along with the merging approach with existing road. The service road below the Elevated Corridor is excluded from the maintenance scope of work under this tender. The contractor shall safely carry out all the maintenance work in close coordination with the authority to avoid any unwarranted issues with the commuters. The contractor shall keep records of all kinds of inspection and maintenance with acknowledgement from the authority. The Contractor shall submit a monthly report to the Authority about the maintenance work carried out in that respective month.

4.2 Maintenance Operation

These operations are basically of two types i.e., routine or ordinary maintenance operations and specialized maintenance operations. The repetitive type operations are simple technique wise and are classified as routine maintenance operation. The specialized maintenance operations are those which are relatively more complex and are generally unpredictable regarding the necessary.

The following list is divided into two parts i.e. routine and specialized maintenance operation. The routine maintenance operations are to be carried out by the Road and Bridge department of KMDA as they are simple but are essential to maintain the proper functioning of the structure. The rather complex specialized maintenance operations will generally be required after series of inspections which will generally dictate their necessity. These should be taken up urgently and preferably carried out by specialist agencies if expertise is not available within KMDA.

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4.3 Routine Maintenance Operations

Simple cleaning by mechanical means or manually (of carriageways, Kerbs, Railings, joints, drains, etc.), removal trash and parasitic vegetation and similar operations. Localized repair to pavement and water proofing using bituminous materials. Cleaning of transverse grooves of expansion joints especially near kerbs. Localized patch repairing of concrete and subsequent painting with cement based paints. The detailed routine maintenance activities are listed below.

4.3.1 Cleaning and Clearing

4.3.1.1 Cleaning of Decks

As part of routine maintenance bridge decks should be cleaned together with drainage spout and drainage pipes to maintain free drainage and prevent ponding of surface-water on the bridge deck. Similarly the drainage system on surface should be ensured for free flow to prevent any overflowing.

Wearing coat should be provided for the full width between inner face of crash barriers to prevent moisture ingress. The seal should be dished around the scuppers to allow for drainage. Care should be exercised to ensure that the finish does not create a hazard to cyclists and motorists.

Maintenance Method

- a) Sweep loose material from inner face of crash barrier and wearing coat on bridge deck either manually or by mechanical removed devices (i.e. street sweepers etc.)
- b) Collect or remove material from the deck, expansion joints and drainage spouts.
- c) De-silting of drains/sewer lines on surface.
- d) Dispose of collected material at an approved disposal or till date

4.3.1.2. Clearing Bridge drainage Systems

As part of routine maintenance the deck drainage system should be cleared. Bridge drainage systems consist of drainage spout and drainage pipes with open joints. All drainage spouts should be examined and cleaned on regular basis. Poor drainage is normally due to the accumulation of dust and other debris within the drainage system preventing proper draining. Stagnant water may contain corrosive acidic chemicals that will cause corrosion in the spouts and leaking through joints could also attack structural elements of the bridge. Similarly, any stagnant water on surface below viaduct due to overflowing drains and sewer and ice-salt water should be cleared.

Maintenance Method

- a) Lift the grating from the drainage spouts, surface drains and remove debris and sediment.
- b) Use clean water when flushing drainage spouts and downspouts, remove cleanout plugs as necessary. Avoid using high-pressure water as it may damage joints or anchors.

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- c) Pressurized water or metal probes may only be used to remove debris where other methods have failed. Such methods should be accompanied by inspection and repair of joints and anchors after clearing.
- d) If debris has accumulated in down spouting it should be dislodged with low pressure water.
- e) Deposit collected debris at an approved disposal or fill sites.

4.3.1.3 Cleaning and Checking Expansion Joints

As part of routine maintenance, the expansion joints should be cleaned of dirt, grit, weeds, and stones. Inspection of the joints for any damage should be carried out after cleaning of the compressed air.

Damage to expansion joints may occur due to following reasons:

- The impact of tyres on seals at the deck level.
- Loss of adhesion between sealant and the concrete /steel joint.
- Cracking of the sealant due to loss of cohesion strength or inadequate tensile capacity (i.e. fluctuations in joint gap that are not accommodated by the sealant.)
- Cracking and breaking up of the expansion joint nosing.
- Cracking of the asphalt at the joint due to deck movement and span rotations under load.

Maintenance method:

1. Use brooms, compressed air or shovels to remove excess debris within the joint. Care should be taken not to damage the expansion joint materials when using a shovel.
2. Undertake inspections of the joints immediately after cleaning.
3. Check and note any defects in joints.
4. Any defects to the joints should be repaired or replaced permanently at a later date by specialist expertise for correct installation.
5. Remove any vegetation or plants which usually grow in the expansion gaps.
6. Joints should be checked for leakage on wet days when leaks are most noticeable.

4.3.1.4 Cleaning pier/columns/pier-caps/beams/Abutment caps

An accumulation of trash and dirt on pier/abutment/caps can lead to deterioration in the structure due to the effect of water, chemicals or fungi or algae. These areas are also susceptible to damage of aggressive materials around or vandalism.

Maintenance Method

1. Collect and remove trash, dirt and other debris from abutments or caps by brooming, shoveling, vacuuming or other suitable methods.
2. Cut/remove any vegetation or growth.

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3. Loosen dirt and debris with scrapers and stiff brushes, as necessary.
4. Wash the area with clean high pressure water if further cleaning is required.
5. Remove any hazardous materials stored around sub-structure elements.

4.3.1.5 Cleaning bearings surfaces

Any deterioration in bearing and support could result in differential settlement of the supported super structure and overstress. Therefore, bearing surfaces should be cleaned of dirt, grit and moisture build up as part of routine maintenance. The damage to bearing surfaces usually takes the form of scaling, staining, damage or crushing off at the comers. Leakage of joints tends to result in accumulation of chemical-laden dirt and debris in this area and the degree of deterioration is likely to be greater closer to the point of leakage.

An efficient way to prevent bearings and bearing seats form deterioration is as follows.

- Ensure deck joints are sealed and leakage of water minimized.
- Ensure seal is in place.
- Install pipes or splash plates to divert discharged from drainage spout and drainage pipe joints.
- Clean surfaces regularly to minimize accumulation chemical-laden dirt (birds' excreta) and debris.
- The surface should be flushed annually after the rainy season.

Maintenance Method

1. Set up scaffolding position man-lift or traveling platform or under bridge inspection platform as required.
2. Re-insert or replace dust seal if misplaced or damaged.
3. Clean the bearing surfaces manually by scraping, brushing or chipping all accumulated site.

Any major defects should be repaired or replaced permanently at a later date by specialist contractors as most bearing systems require specialist expertise for correct repairing installation.

4.3.1.6 Cleaning Steel Horizontal Surfaces

As part of routine maintenance all steel surfaces should be cleaned to minimize the potential for corrosion.

Maintenance Method

1. Clean the horizontal surface by scrapping or brushing to remove all accumulated debris.
2. Dirt material should be collected and disposed at an approved disposal site.
3. Flush all horizontal surface of structural steel members with pressurized water to remove salt, dirt and debris, which cannot be removed by manual cleaning methods.

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4. Use clean water when flushing the surfaces.
5. Touch up with paint the corroded or part exposed surfaces.

4.3.1.7 Cleaning blocked and Silted surface drains.

Debris and silt which are deposited in front of or inside the open drains carrying runoff from flyover, blocks the flow of water. If not regularly cleaned out, the debris and silt may build up until the drain is completely blocked, Blockage or excessive growth in the waterway of the drain or downstream outlet may lead to obstruction of flow. It is necessary to inspect and clear the entire drainage system including the inlet, the cutlet and the length of all the carrier surface drains.

Maintenance Method

1. Determine the cause of the blockage.
2. Remove the source of blockage to clear flow inlet and cutlet.
3. Inspect the inlet outlet and full length of drain and clear debris.
4. Drains which are blocked to half of their depth or greater should be cleaned out with shovel, scrapers or high-pressure water blast internally to allow flow through the drain, preventing ponding and further silt deposition.
5. Blocked drains due to sitting should be repaired to determine whether sit trap is required at the joints turns and outlet to prevent further siting.

4.3.1.8 Removing Vegetation from Structures

Vegetation should be removed from flyover structures at abutments piers, half joints of floating spans, expansion gaps, parapets or drainage spouts of repairing walls to avoid the weeds destroying the mortar and displacing the masonry blocks.

Maintenance Method

1. It is important to kill and remove vegetation and its roots to prevent damage to the masonry.
2. Vegetation can be removed mechanically using appropriate scrapping tools. For areas out of arms reach, outreach assistance such as a pole-mounted tool or access equipment should be used.
3. Alternatively, they can be sprayed with a weed killer (Glyphosate or equivalent) impacting other plants. Over time, dead weeds should detach naturally.
4. Eliminating potential sources of water and moisture on the structure will assist in controlling and limiting potential for re-growth of vegetation.

4.3.2 Maintaining Pavement and lighting

4.3.2.1 Seating Cracks in asphalt Surface & lighting

The asphalt surface on the bridge deck may be cracked. The crack can appear in the asphalt due to small movements and differential rotations of the spans under load and the influence of temperature situation.

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Maintenance Method

1. Except for fixed joints cracking can indicate the pressure of other problems and should be addressed.
2. The cracks should be cleaned using compressed air blast then sealed to just below road surface level with hot-poured-rubberized or polymer-modified bitumen; by sealing to just below the road, tyres will not impact the soft material and the sealant will not be expelled in the warmer weather when the asphalt expands.
3. Electric bulbs to be replaced immediately in case of getting fused.

4.3.2.2 sealing potholes on bridge decks

As part of routine maintenance, all potholes should be sealed.

Maintenance Method

1. All weed growth should be removed, and the unsealed edges spray sealed to the kerb face to prevent further moisture ingress.
2. Deck drainage should be investigated to remove the surface water from the bridge and eliminate any water ponding to prevent any rutting and formation of potholes.
3. Surface cracking should be corrected with any crack sealant as detailed in treatment for crack repair of asphalt. Potholes should be repaired by removal of gravel in damaged areas and backfilled with cold mix/ hot mix asphalt (as specified) and well compacted using a vibrating plate or repeated drop weight on a heavy plate.

Care should be exercised in sealing works to not restrict the functionality of drainage spouts by reducing the diameter, sealing over them or affecting surface levels and hence fall towards the scupper. Similarly, the gaps in the expansion joints should stay clear and clean for ensuring their performance.

4.3.2.3 Maintaining bridge Approaches-Pavement and Drainage

Quality of solid approaches can significantly influence the impact a vehicle imparts to the structure. A smooth and well-graded transition from the road to the bridge serves to minimize impact on the structure. Poorly graded or uneven pavement which settles below the deck level may impose severe dynamic impact from heavy loads adjacent to the end of the structure. The maintenance team should look for settlement behind the abutment especially, where there is a large fill embankment, and also check for an even approach grade where the structure is higher than the surrounding ground. Drainage of the bridge approaches should also be examined regularly.

Maintenance Method

1. Inspect pavements on the approach and patch settled asphalt as required (deep patching maybe required)
2. Identify locations for patching.

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3. Check whether water from the bridge deck is channeled into a drainage pit at the low end of the deck and discharged well clear of the structure. Identify pits and pipes which may require cleaning of debris. Scheduled a sucker vacuum truck to clear pits and flush pipes as required ensuring drainage is functional again.

4.3.3 Maintaining Parapets and fencing

The concrete parapets and fencing may be heavily cracked and spalled due to impact damage

Maintenance Method

1. Any damage to the fencing due to vehicle impact should be repaired immediately depending on the severity of the damage.
2. There may be rust, stains and paint damage of the members of fencing and the same should be repainted after rust removal and rust protection.
3. The reinforcement of damaged crash barrier should be thoroughly cleaned and primed followed by patching, spalling and scaling repairs with a polymer modified mortar.
4. If the concrete of parapet posts and rails are cracked or spalled, they should be repaired by polymer modified mortars and repainted.

4.3.4 Painting

Painting of structural components as an when required and asked by EIC against any kind of discoloration or shabby appearance.

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